THE JOURNAL
OF THE
Michigan State Medical Society

ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

VOL. 34 DECEMBER, 1935 No. 12

THE STATUS OF THE ESSENTIAL HYPERTENSION PROBLEM*

S. MARX WHITE, B.S., M.D., F.A.C.P.†
MINNEAPOLIS, MINNESOTA

For nearly a century following Bright's classic work in 1827, the close similarity between the renal glomerular changes in chronic glomerulonephritis and in the late stages of essential hypertension has been a source of confusion and misguidance so far as the fundamental etiology of the latter condition is concerned.

The search for the causes of increase in pressure within the arteries in these two, and in other conditions has led into many fields, such as exogenous and endogenous toxins, endocrine and metabolic disturbances, and finally into the physiology of the mechanisms governing pressure within the arterio-vascular system.

The search for chemical substances, including hormones, causing increase in arterial pressure, has been continuous and intensive, stimulated by the occurrence of arterial hypertension in such diverse conditions as lead poisoning, gluttony, the toxemia of pregnancy, glomerulonephritis, and in certain cases of gout, diabetes, obesity and pituitary and adrenal tumor.

In certain of the conditions toxins no doubt play a rôle in causing elevation of pressure, but outside of this group is a much larger group in which such factors do not play a primary causative rôle and in which hypertension exists long before any other demonstrable change. This is the group under consideration, and it is certain that most, if not all, of the cases developing hypertension in the endocrine and metabolic groups of disorders are examples of its development in individuals so predisposed by inheritance or otherwise, a small proportion of the cases with certain adrenal tumors providing an exception.

Aschoff,[3] in 1933, has summarized his views and definition of the functional, degenerative and dystrophic diseases of the vascular system. In contradistinction to arteriosclerosis, the well-known decrescent condition of advancing years, arteriolosclerosis affects the precapillary arterioles with hyaline and lipoid imbibition in the vascular walls, which swell up to such a degree that the lumen of the arteriole may be completely occluded. In the incipient prearteriolosclerotic state the arterioles may be still quite free from actual disease. Aschoff considers it fairly certain that the origin of this condition is in a functional stimulation of the vascular system which manifests itself by hypertonia, and states, "If it is at all justifiable to advance an opinion at this time, it would seem that the hypertonia should be regarded as the cause of arteriolosclerosis of these vessels. In what particular way the latter is caused is a matter for special investigation." It is necessary, however, to consider arteriosclerosis and its variant arteriolosclerosis together not only because of the frequent association of the two but because their pathologic processes are so simi-

*The Andrew P. Biddle Oration at the Annual Meeting of the Michigan State Medical Society, Sault Ste. Marie, Michigan, September 25, 1935.

†For professional note see page 793.

lar. He considers arteriosclerosis and arteriolosclerosis as parallel affections, the distinguishing feature of the latter being its localization in the terminal vascular regions. Volhard,[34] a distinguished student of renal and vascular disorders, makes an interesting distinction between what he calls "pale hypertension" and "red hypertension." In the first group the patients are pale, and he believes this must be caused by the contraction of all vessels. This group comprises nephritic patients with the tendency to develop angiospastic retinitis. This can arise through a chemical humoral mechanism only, it being difficult to imagine that a hypertensive condition in which the arteries of the brain and the retina are constricted can be brought about by a nervous mechanism. Pale hypertension occurs also in forms of chronic hypertensive disease leading to deterioration of kidney function. This is the so-called malignant hypertension, in which a two-fold relationship probably exists, the vaso-constructive substance or substances being the product of a diseased kidney and also a toxicant to the kidney, leading to renal insufficiency through lasting circulatory disturbances. Volhard believes that red hypertension is not, as he earlier believed, of renal origin. It is prominently a disease of old age, seldom occurs before 30, rarely before 40, frequently between 40 and 50 and most commonly between 50 and 70 years of age. He now inclines to the belief that heredity, besides age, plays an important rôle and he is inclined to credit the existence of a hypertensive constitution instead of the usual assumption of an abnormal excitability of the vascular system manifested perhaps through an early vaso-neurosis, but states, "It is, however, possible that the wear and tear of a normal vascular system becomes accelerated through an inherited vaso-lability, expressing itself by abnormally strong and frequent blood pressure fluctuations of nervous origin."

The study of a hereditary factor in essential hypertension presents peculiar difficulties and sources of uncertainty. The first of these is that in much of the literature arteriosclerosis and arteriolosclerosis, that form of vascular disease associated specifically with hypertension, cannot be clearly differentiated. If it can be proved that the heredity runs not primarily to the structural change but to the affective phenomenon of an unusual degree of blood pressure (pressor) response, this confusion can be replaced by some approach to clarity. The difficulties and uncertainties of determining in successive generations the facts concerning a disorder so slow in its evolution and often late in its manifestations are great, and to a large degree insuperable if we demand all the postulates of modern genetics. However, Lenz[5] states that a knowledge concerning descendents is no less valuable than knowledge concerning ancestors, and information about collateral relatives is equally useful. Thus, by determining blood pressure in the living, the principle of study of the collateral relation of the given patient, *i.e.*, sibs, cousins and survivors in preceding and succeeding generations, can be used rather than the usual information on ancestors and remote generations. In man, knowledge of the color of eyes or of the form of a nose or chin may be traced as in portraits for many generations, and the facts concerning bodily conformation, habitus and stature are often preserved in history. When it comes to knowledge of disease in ancestors the doctor's notebook, if it ever existed, is too personal a record for preservation and autopsies too infrequent. Thus it is that ancestral data on disease in man is limited and cannot be used over several generations as in genetics in short-lived animals. The heterogeneous factors in human inheritance will always remain.

The first painstaking and extensive study of the relation of heredity in essential hypertension was that by Weitz,[36] who not only used the method of studying ancestors, which has notorious uncertainty, but also studied the living relatives of the patient and of controls in a sufficient number to show that the proportion of affected to non-affected sibs in families of hypertensive patients approximated the ratio of 1:1, which would be expected if inheritance of the characteristic was dominant in the Mendelian sense. Dominant inheritance of the predisposition to hypertension seemed to him, in the majority of cases, to be certain.

In 1924, a year after Weitz's paper, O'Hare, Walker and Vickers[30] published the first extensive study of heredity in essential hypertension in this country. Their study involved 300 unselected cases of permanent hypertension and a control series of 426 consecutive cases of non-vascular disease, and showed that a family history of heart,

kidney, cerebral disease, etc., was almost twice as common in the patients with essential hypertension as in patients who had no increase in blood pressure.

In a recent study Ayman[4] made a direct study of the blood pressure, height and weight of 1,524 members of 277 families. In the families whose parents had absolutely normal blood pressure the incidence of elevated blood pressure was only 3.1 per cent. In the families in which one parent had arteriolar hypertension the incidence of elevated readings in the children rose to 28.3 per cent; and in the families in which both parents had arteriolar hypertension the incidence of elevated readings in the children reached the striking level of 45.5 per cent. Of 70 brothers and sisters of parents with normal pressure, 37.8 per cent had elevated blood pressure readings, whereas of 86 brothers and sisters of parents with arteriolar hypertension, 65.3 per cent had elevated blood pressure readings. Ayman concludes that these results are strong evidence for the existence of a hereditary factor in arteriolar (essential) hypertension.

Several studies in identical twins seem to show that blood pressure is strongly conditioned by genotypic factors. Recent knowledge makes it clear that these factors involve the vegetative nervous system.

Weitz[37] and Nador-Nikitits[29] describe essential hypertension in identical twins. Von Verschuer,[33] and also Curtius and Korkhaus[14] have made blood pressure determinations in many identical and fraternal pairs of twins. In both studies the differences in blood pressure between identical twins was significantly less than between the pairs in fraternal twins. Curtius and Korkhaus in their material studied also certain responses mediated by the autonomic nervous system, such as respiratory arrhythmia, pulse frequency, reaction to adrenalin and to water drinking tests. They found a great similarity in responses in identical twins and marked differences between repsonses in fraternal twins.

Williams[39] does not see hereditary factors clearly demonstrated, and Moschcowitz,[28] while agreeing that there are families in which hypertensive states seem hereditary, believes that the influences can be more directly traced to environment than to heredity.

While realizing the difficulties of studies of heredity in man, it must be said that since Weitz's paper in 1928, there has been an impressive accumulation of evidence in favor of the hereditary predisposition to essential hypertension. The physician, meeting as he does many families in which for two and sometimes three generations, he finds essential hypertension prevalent, in contrast to hypertension-free families, cannot escape the belief that heredity plays a definite part in this condition.

The concept that in hypertension the vasomotor centers may be hyperirritable was first advanced by von Monakow[27] in 1920. He states that hypertension can occur on a nervous basis, possibly through changes in the field of the internal secretions, or they may be conditioned by toxins, the phenomena of blood pressure rise occurring in the field of the sympathetic and originating in the hormones.

Fulton[17] states that the control exerted by the central nervous system upon metabolic and other vegetative processes of the body was predicted by Claude Bernard. The maintenance and control of blood pressure within the arterio-vascular system is one of the vegetative processes. The fact that blood pressure may rise during conditions of emotion was first described by Hill[20] in 1898. Many physiologists working on lower animals have thrown much light upon the activities of the various mechanisms in what we now call the autonomic nervous system, regulating certain bodily activities. Karplus and Kreidl[23] in 1911 had observed that direct stimulation of the hypothalamus caused marked rise of blood pressure and dilatation of the pupils. Cannon[7] published the first systematic study of the physiologic responses in the body, the affective responses in states of mental excitement, fear and rage. He showed that certain emotional states are accompanied by processes in the autonomic nervous system, among which are increased activity of the sympathetic division, causing an increased outpouring of adrenin into the blood, leading to a dramatic series of bodily adjustments which drive the blood out of the vegetative organs of the interior serving the routine needs of the body into the heart, the lungs, the brain, as well as into the skeletal muscles. With this adjustment there is a rise of blood pressure in the peripheral circulation, an increase in red blood cells, a rise of blood sugar, a diminution in coagulation time and other changes, all of an order necessary in preparation of the body for

combat or escape. The high blood pressure developed in excitement and pain would be certainly serviceable in the muscular activity likely to accompany these motivating forces.

Cannon and his co-workers[8,9,10,11,12] have discovered a substance secreted at the endings of the sympathetic nerves to which they give the name sympathin. The physiological function of this sympathin is to distribute the autonomic impulses through smooth muscles. It resembles adrenin in that it is given off into the blood stream, acts like adrenin, and coöperates with adrenin in mimicking sympathetic nerve impulses.

This briefest of excursions into physiologic literature is not made as a thesis directly connecting adrenin and sympathin with essential hypertension, but is made in order to call attention to the complex character of the very significant changes which occur in the body in response to emotional states. Among these responses, increase in blood pressure plays a significant part. We are dealing here with animal experimentation and the physiologists have had an almost unlimited field for study. Blood pressure has received, if anything, less than the usual amount of attention, especially as compared to chemical and hormonal study. Prolonged hypertension under natural conditions in animals is not known. A study of the emotional life of the ape, the cow, the rabbit and the duck would, therefore, not lead to any information concerning its relationship to this disorder, which appears to be the exclusive prerogative of man. We may, therefore, pardon the animal physiologists for their somewhat casual attention to this affective phenomenon of such great significance to us.

While permanent chronic hypertension is not known under natural conditions in animals, discovery of the possibility of its experimetal production by section of the aortic nerves* and carotid sinus nerves[24] affords a method which greatly illuminates the study of the mechanisms of control of blood pressure.

Any attempt in this paper to consider the pathways and centers of autonomic vegetative and reflex control of blood pressure is unnecessary. To those interested, several recent contributions are especially recommended. Fulton[18] views new horizons in physiology and medicine, the hypothalamus and visceral mechanisms. Hering[19] devotes a short monograph to the blood pressure-curbing-tonus (Blutdruckzüglertonus) in its significance for parasympathetic tonus and sympathetic tonus, and Koch[25] a monograph to the reflex self-regulation (reflektorische Selbststeuerung) of the circulation. McDowell[26] reviews the subject of the nervous control of the blood vessels. James C. White[38] devotes a monograph to the surgical aspects of the autonomic nervous system. Surgery has passed the outposts of this terrain and promises to explore in man a territory hitherto possessed only by physiology in the experimental animal. In this connection one is reminded of the service by surgery in increasing our knowledge of the physiology and pathology of the gastrointestinal tract.

Recently Hines and Brown,[21] utilizing a standardized cold stimulation test and studying the blood pressure response, have laid a foundation on which it will be possible to accumulate data as to the reactibility of the pressor mechanism in large numbers of individuals. They conclude that at least 98 per cent of all subjects with hypertension of the essential form exhibit excessive reactions to local cold. They state, "There is impressive evidence to indicate that certain subjects have a constitutional or biologic abnormality which leads to the development of essential hypertension. Demonstration of this potentiality should be possible theoretically years before the onset of the clinical degree of high blood pressure. Subjects can be grouped as those with minimal and those with excessive responses of the systemic blood pressure to sensory and psychic stimulation. There is some evidence that the so-called normal subject who exhibits this hyper-reactivity will eventually suffer from hypertension unless development of this condition is forestalled."

The character of the pressor response to local cold has been confirmed by others.[6,15,31]

In a further report[22] which the authors have kindly shown me, Hines and Brown have reported on 571 normal and hypertensive subjects, and amplify their original conclusions. They classify all subjects into (1) "normal reactors," (2) "normal hyper-reactors," and (3) "essential hypertension." Of especial interest is the fact that of the eight hyper-reactor normals they reported in 1932, three have developed at this time clinical degrees of essential hypertension with elevation of blood pressure and demonstra-

*Formerly called the depressor nerves.

ble hypertensive changes in the retinal arterioles. They submit the conception that essential hypertension affects only subjects who are hyper-reactors and that an abnormality of essential hypertension is an excessive response in the blood pressure to intrinsic and extrinsic stimulation.

The importance of the point of view of the physician in dealing with the earliest manifestations of essential hypertension—excursions of arterial pressure beyond the usual or normal levels—becomes obvious when the subject of management is under consideraton. The determination of the systolic and diastolic levels of these individuals at rest and in a state of physical and mental relaxation, the so-called basal level, is important, but there is a growing recognition of the need for determination in the individual of the level or levels to which the pressure may be made to rise. Many reports, and frequent experiences of my own, have shown that in certain persons while at rest the vasomotor apparatus may manifest remarkable increases brought about solely by conditions of attention or emotion on the part of the subject under examination. In a partially darkened room, recumbent and as serene as possible, the only varying condition being the activities of, and the subjects of conversation by, the examiner, variations of 30 to 40 mm. of mercury in systolic pressure can be brought about almost at will in subjects with an abnormally labile vasomotor apparatus. The diastolic pressure varies in general in the same direction as the systolic but to a less degree. Since the diastolic pressures rise, or at least do not fall, the mean pressure is elevated and the total work of the heart is increased. During a session of fifteen or twenty minutes, and often much less, the examiner, even though possessing little accurate information of the subject's personality and environment, can often cause rise and fall in the blood pressure at will by discussing well-chosen topics. One can play upon the emotions and through them upon the blood pressure to an astonishing degree. Comparison with a musical instrument is not inapt. Only adjustments of a physiologic character could be capable of such rapid and accurate responses. The limit of spread I have observed under the above conditions at a single sitting is 65 mm. systolic and 25 to 30 mm. diastolic pressure in patients in the labile phase of hypertension. The normal subject under similar conditions can scarcely be made to vary more than 20 mm. systolic and 5 to 8, seldom 10, mm. diastolic. Instances recorded in the literature of these variations are too numerous to require reference.

The first instance of this extreme lability in my own experience has its parallel in innumerable published case histories, but as it was the first case to call the writer's personal attention to the phenomenon, it will bear a brief recital.

F. W., male, aged forty, was first seen in 1908. A graduate in medicine, bacteriologist and administrator of national and international fame, he had untiring initiative and energy and was developing the institution with which he was connected to a remarkable degree. His blood pressure on the first examination was 210/102. A few days later it registered only 175/96. No other departure from the normal was found. The urine, with a specific gravity of 1,026, showed no albumin or casts. No abnormalities were found in the urine during the first two years of my observation. For five years I was able to study the factors contributing to variations of his blood pressure during waking hours. I knew intimately his sources of anxiety and strain and of pleasure and relaxation. With him recumbent and comfortable, coöperative and interested in the study in a quiet, semi-darkened room, I could vary his systolic blood pressure as much as 55 mm. of mercury almost at will. If I talked about his specific interests, the resistance to his plans on the part of superior and inferior officials in his organization, I often got the high point of 210 systolic and 104 to 108 diastolic. Let my conversation and consequently his thoughts drift casually to blooded dogs, hunting, music and his other sources of recreation and relaxation, and I often secured readings between 165 and 175 mm. systolic. Leaving him lying alone in the room, while I went about some duties elsewhere, cautioning him to pay no attention to my re-entrance, I repeatedly found him relaxed, half asleep, with blood pressure as low as 155 systolic and 92 diastolic. The range of variation was 55 mm. systolic and 16 mm. diastolic, and this range was obtained at will by varying only the content of his mind and the consequent pressor responses. This lability of blood pressure was demonstrable during the five years to and including 1913, after which there were only occasional opportunities for study. During 1912 I was unable to get a systolic reading below 162, although the maximum systolic record had not increased above 210. Repeated urinalyses showed no lowering or fixation of specific gravity, and albumin and casts were absent as a rule. Beginning late in 1911, however, occasional specimens showed albumin or casts, one or the other alone or both together, always in minimal amounts. In 1913 he was offered a position with greater responsibility in another institution, and feeling as he did that new superiors in his own institution were not giving his plans the support they deserved, but wishing to remain in Minneapolis, he gave the new project serious consideration. During this period the range secured was from 216/110 to 176/102. The lability of pressure was lessened and albumin and casts were appearing in the urine with greater frequency and persistency. With a very few opportunities for study in 1915, pressures varying from 215/108 to 188/105 were secured. In September of 1918 a letter received from him while I was

in France said that he had been blind for six months from retinal hemorrhages and exudate and that his blood pressure was higher than any I had seen and did not drop as formerly. No figures were given. His condition was that of so-called malignant hypertension with stabile, instead of the formerly labile, pressures. His death followed within a month from the time he wrote the letter. This is not an isolated case. Its clinical features and sequences are common knowledge.

O'Hare, Mosenthal, Fishberg, Stieglitz and many others in this country have recorded great extremes of blood pressure in the labile phases of essential hypertension. It is not necessary to labor the point. These variations are expressions of vasomotor phenomena essentially or primarily normal in character, developed to an unusual and finally pathologic degree. Whether excessive pressures alone are capable of causing, after a sufficient interval, the characteristic arteriolosclerosis and its organ damage so often found clinically and pathologically in the late stages of the malady, may be still a subject for speculation. Such a relationship would be natural. It is, however, a matter of common experience and is noted by nearly all writers that some individuals tolerate periodic and even more persistent increases of blood pressure without manifesting clinical or pathological evidences of arteriolosclerosis. Many of the patients with so-called benign hypertension live out their expectancy and in a significant number of instances no evidence of arteriolosclerosis can be found by histologic examination of the organs after death. A patient with benign hypertension must ultimately develop at least hypertrophy of the left ventricle of the heart, unless death from other causes intervenes.

The limit of time during which it is possible for a patient to sustain hypertension is not known. Individual variations are so great that a common denominator cannot be found. Opportunities on the part of a single physician to trace a given patient are too few. On one patient, however, I have personal knowledge covering a period of twenty-five years:

Mrs. H. was first seen in 1910 in her sixtieth year. Her blood pressure was 208 systolic and 100 diastolic. I was able on the first examination to get readings as low as 192/98. All other essential features of her examination were negative. There were sources of worry to her in finances and in the family life. However, she had a keen mind, a fine philosophy of life and great capacity for coöperation. Although there was less understanding on the part emotional factors may play in this condition then than there is now, attempts were made, and have been continued in the family, to lessen her responsibility and sources of strain. Above all was her placid, though not fatalistic, acceptance of her condition. Repeated and accurate, though not frequent, observations have been made personally. The levels most commonly found have been between 160 and 180 systolic and 98 and 104 diastolic. During two stressful periods of great personal loss the maximum found at one time was 198/105, at another time 195/100. Between these two periods, which were several years apart, a maximum reading of 165/100 and a minimum reading of 145/96 were obtained. On several occasions attempts have been made to find evidences of the usual accompaniments of the hypertensive state. The last examination made in 1933, 23 years after the first observation, failed to show more than the evidences in the circulatory apparatus of a moderate grade of arteriosclerosis in the peripheral vessels and probably in the aorta, the latter attested by a systolic murmur of rough quality, heard from the aortic area to the suprasternal notch without any evidence of aortic stenosis. Ophthalmoscopic examination showed a little patchy irregularity in some of the retinal arteries, which were somewhat tortuous. Compression of a vein at an arteriovenous crossing could be found in only one place. No sign of retinal hemorrhage or exudate was found. The heart outline in the six-foot x-ray film was not demonstrably widened, and its contour was within the limits of normal, although it was recorded that the apex seemed a little more blunt and rounded than in the usual heart silhouette. The urine showed a trace of albumin, a very few small finely granular casts and some cylindroids, a condition to which a woman of eighty-three years is entitled. This patient is living, placid and serene, at eighty-five years.

The case above reported is an isolated observation and I have no other covering a period of time that approaches it. A few of ten and twelve years, however, are found.

Fahr,[16] writing on the hypertension heart in 1928, cited his cases best followed to that date, showing that persons may have well over 200 systolic pressure for ten to fifteen years before definite symptoms of heart failure develop. He cited four cases followed for fifteen, eleven, eight and ten years. Such cases, while they are the exception, are common enough to prove the relative benignity of hypertension in certain individuals. One gains the definite impression that in general the process is less rapidly progressive in the later decades of life. In these decades, however, other causes of death are likely to end life before the natural termination of the malady can develop.

What it is that conditions the development of the so-called malignant forms of hypertension is not known. Systematic observation of blood pressures in childhood and youth has not been in wide enough use or over enough years to determine whether or not the malignant forms of hypertension seen in adolescence or early adult life are commonly preceded by a labile phase tem-

porarily benign in its manifestations. This sequence is common in the cases in the later decades.

In the period of life when decrescent changes are under way we frequently see on the one hand benign types of hypertension with a protracted course, and on the other hand decrescent types of arteriosclerosis without hypertension. They can be shown to be separate and distinct entities. Allbutt[2] established this differentiation. It is generally agreed that arteriosclerosis *per se* is not a cause of hypertension but that on the other hand hypertension exaggerates and accelerates those parts at least of the decrescent process or processes due to stresses in the arterial wall. Increased intravascular pressure should and probably does cause pathological changes in that part of the arterial tree most concerned in its production, *i.e.*, in the arterioles. It is most probable that individuals with a poorer tissue endowment in their blood vessels would succumb earlier than others to these abnormal stresses. It is not unlikely that this group furnishes the majority, if not all, of the cases of arteriolosclerosis with malignant hypertension. This part of the problem, however, does not seem to be in process of solution.

Having been interested in the study, management and treatment of cardiovascular disease for 25 years or more, I have gained some very definite impressions as to therapeutic efficacy in essential hypertension. Several years ago I had tried and gradually given up the use of most of the drugs reputed to reduce blood pressure. I shared the impression formed and expressed by many others that this method, while it might produce temporary results in an occasional patient, was a false method and likely eventually to do more harm than good to the patient.

Weiss and Ellis,[35] in a study of the quantitative aspects and dynamics of the circulatory mechanism in arterial hypertension, bring out the point that unless cardiac output is known, the significance of a fall in blood pressure following therapeutic agents in hypertension may not be properly appreciated. Quantitative measurements of the circulation in these patients before and after treatment are necessary if harmful results are to be averted. Therapeutic procedures that lower the blood pressure through decreased cardiac output are harmful.

In 1925 Rowntree and Adson,[32] having been impressed by the vaso-dilator effect following lumbar sympathetic neurectomy in cases of spastic paraplegia, reported the first bilateral sympathetic neurectomy in the treatment of malignant hypertension. Recently Craig and Brown[13] from the same clinic have published five cases, using a technic previously described by Craig. Adson and Brown[1] report results in these patients with another type of operation, the purpose of which was to denervate the adrenal gland and to destroy the outflow on the vasomotor nerves to all structures below the diaphragm. Various forms of surgical attack on the sympathico-adrenal system are being devised and attempted in man, with occasional unfortunate complications in the spinal cord in some and with complete paralysis of the abdominal muscles in certain forms of operation. These modes of surgical attack can be justified only if they can show radical and permanent reduction of the hypertension and protection against its ultimate consequences.

The chief interest of the writer in the therapy of essential hypertension centers in the functional or labile phase and in those individuals presumably on the borderline of normal, who exhibit excessive pressor responses to emotional stimuli. Since Hines and Brown[21] published their cold stimulation test, this simple, well-standardized and quite reliable test has made it possible to discover individuals who might not otherwise as readily reveal their pressor hyperreactivity. The opportunity for study of pressor reactions to emotional states is not easily secured in individuals tested as normals. When their susceptibility in this regard is once discovered, they reveal emotional hyper-reactivity of the blood pressure as well. The writer has long been studying the blood pressure response to emotional states in hypertensive patients and has attempted management of the early labile phases of the disorder with the view of shortening the periods of higher pressure and lengthening and multiplying the periods of lower pressure by control. This is on a basis of definite opinion that there is a predisposition in these patients to excessive pressor responses, normal in mechanism but excessive in degree, and that the too-frequent recurrence of these excessive responses is the primary factor in producing higher and more fixed blood pressures along with cardiac hypertrophy and vascular

changes. Whether another factor, probably also inherited but with independent inheritance factors, conditioning the vascular system, particularly the arterioles, to a more pronounced or earlier-developing form of arteriosclerosis plays a part in the genesis of malignant hypertension, is unknown. If there were a hereditary predisposition which runs to primary organic change with hypertension secondary thereto, there would be little or no opportunity for effective therapy since we do not have adequate knowledge of metabolic, endocrine, humeral or chemical factors underlying these changes, and possess practically no direct control over them. Hereditary predisposition to the excessive pressor responses should, however, give opportunity for some degree of control of the frequency and character of the emotional stimuli and of the affective response. That the degree of control possible varies almost to infinity does not need elaboration. It is enough to say that too many of us cannot control ourselves, let alone our environment. The effort at control by the physician requires profound understanding, infinite patience and ability in teaching. The primary aim is to modify the environment of the patient insofar as it affects the pressor responses. There is as yet no evidence that we can control the degree or extent of these responses by rational methods other than by control of the stimuli causing them. This degree appears definitely to be inherent in the mechanism of each individual. The secondary aim is to diminish the periods of high pressure and increase the periods of low. The methods of satisfying these aims will undoubtedly vary with every medical advisor. The details will vary widely, but there are certain principles I have learned to follow and having followed them, I believe that definite results have been secured. In a very satisfactory proportion of patients effective management begins with the first interview and I have even at that early date, and maintain throughout, two purposes. The first of these is to show the patient that some drop in pressure can be secured by rest and relaxation. It is rare, indeed, at the beginning to get as good a drop in pressure as may be secured later when the patient has become acquainted with, and it is hoped has developed some confidence in, the physician. The second purpose is to acquaint the patient with the fact that with proper attention to his condition and his emotional responses the usual outlook is favorable. The stories passed about from mouth to mouth have usually given the patient a very distorted view. The recital of the condition of health and strength of one or more long-lived cases goes further in my experience toward establishing a favorable viewpoint than does a more theoretical discussion, even though it may be backed by profound knowledge of the subject. The patient is warned against family and neighborhood sources of medical information and is shown that the problems and course of some other patient whose disorder has the same name or who may have one of the same symptoms are in no sense his or her problems and course. This warning requires reiteration. I am sure that one of the most vicious effects of neighborhood medicine is to wreck very many well thought out and intelligently conceived medical programs which would otherwise be effective.

I am willing to discuss with some legally responsible relative the question as to whether a given patient should be given the facts about his blood pressure readings only when they are high, relatively fixed, and when in my opinion the patient has passed beyond the labile phase. I will confess at once that I have no facility in management if concealment or misrepresentation is necessary. In my experience a thorough knowledge of, and repeated experience in, the lowering of blood pressure to be secured by relaxation is a *sine qua non* of effective management. If the patient himself can realize that when he is relaxed and serene, his blood pressure is down, and that when he is hurried, worried and on tension, his pressure is up, then my explanation will have some weight. During examination the patient must not see the monometer for the attention and emotional response prevent the desired relaxation. I tell him that I will not give his readings until the observations are finished and why, but that when completed, I will give him the exact ones, which I do. I have thus at once secured his interest in a procedure novel to him. When the knowledge I possess is given to the patient freely, I have secured not only his confidence but also shown him something he did not know about blood pressure. Simple as it seems, the effect is usually profound, and I am accorded as much opportunity for control as the mentality of the given patient will

allow. Aye, there's the rub. Just as we are dealing with individual pressor responses in emotional states, we are dealing with individual capacities to receive impressions and to work out effective programs.

The physician cannot change a patient's environment. He can only suggest a change. The degree and character of change is dependent on the patient. A few principles may be stated here. Details would be superfluous.

The patient cannot successfully change the tempo and methods of his work. Each of us is geared to a certain pull and speed for the best results. The race horse is ill-adapted to traction or the percheron to speed. Hours of work may require modification. Work must be left in the workroom and not carried home. Advice to retire from occupation may be a two-edged sword, and when the patient returns to work under the ægis of a more skilful medical mentor, one edge may cut the doctor who advised it. Recreation requires study and knowledge by the physician as to its effects on the individual. Hours of rest and relaxation must be detailed and scrupulously observed. Relaxation for a short period after meals has a most salutary effect, both on the pressure and on digestion. Vacations and week-ends may require prolongation. Whole Saturdays or Sundays in bed have helped many to reorganize their thoughts in preparation for lessening reactivity. Sleep has well-known depressor effects and the advantages of long hours of this remedy may need emphasis. Sedatives may have a distinct place at proper times in the given case. The care necessary in their use may require explanation. Individualization is the master word in this entire program.

In conclusion: It has long been recognized that in essential hypertension the patients in the early labile phases of the disorder are subject to variations in blood pressure, wider than those seen in individuals with normal pressures, and that the basal or resting pressure is set usually at a level higher than normal. There is as yet no adequate evidence that the degree of pressor reactivity to stimuli on the part of patients with essential hypertension, or of the individuals with normal or near-normal basal pressures but with hyper-normal pressor reactions, can be changed in any considerable degree by methods which do not have other, and often harmful, effects on the patient. Disorders may develop in the circulatory system, sometimes early, but often after many years during which no evidences of structural changes can be found. Two distinctive evidences which show earliest and most often in the clinical case are hypertrophy and dilatation of the heart, particularly of the left ventricle, and changes seen by the ophthalmoscope in the small vessels of the retina. Whether biopsy with microscopic examination of the arterioles will add further useful evidence is not yet established.

The later stages of the malady with fixed blood pressures and with advanced changes in the arterioles together with damage to function and structure of organs do not yield satisfactorily to treatment. No methods are at hand by which the well-known changes in vessels, and through them in the heart, brain, kidneys or pancreas, can be reversed.

This is not to say that treatment in the more stabile and advanced stages of the disorder is without benefit. Much is being accomplished even in severe cases. The fundamental structural changes may not be reversed, but the patient may be greatly aided and relieved, and life and usefulness prolonged. Management and treatment will allow readjustment of the circulatory apparatus, the development of cardiac compensation, and more or less repair of damaged organs. Some patients establish themselves at a lowered level of blood pressure and of working capacity and carry on for gratifying periods of time. Even in the malignant forms a favorable environment may slow the unfavorable progress. In all this the full armamentarium of the physician is called into use.

There is strong evidence that the exaggerated pressor responses and the occurrence of essential hypertension are hereditary characteristics, and further evidence that they can occur as responses, in individuals otherwise normal, to stimuli in the environment mediated through the nervous system. Whether chemical or humoral substances play a part in the mechanism of these responses is not yet known, and no accepted or adequately attested methods for control involving such substances or their antagonists are recognized. Blood pressures beyond those common to the average member of the race must accelerate the responses to overstrain and wear and tear in the cardiovascular system. In essential hy-

pertension the resulting changes reach their advanced stages as a rule in the later decades of life after reproduction has occurred and have not yet been shown to exhibit any tendency to disappear from the race.

The physician, concerned as he is with the problems of early recognition and management during the controllable phases, must recognize the necessity for finding these cases early, and of instituting such methods in management and treatment as will at least shorten the periods when the blood pressure is in the higher ranges in each individual and lengthen and multiply the periods when the pressure may be kept within the lower ranges. An opportunity is at hand for the physician to exercise a measure of control at a stage when that should be possible and can be shown to have definite effect. Tests now available make possible the discovery of individuals with hyper-reactive blood pressure responses during the early years of life, and this discovery should be utilized in the education and training of the affected child and youth when attempts at conditioning are most effective. Control of the emotional life in individuals susceptible to such control has an essential part in the effort to retard the development of structural and organic changes not now adequately controllable by hygienic and medical measures. Surgical interference cannot be essayed properly in the early phases but must be reserved for the late and otherwise uncontrollable stages, if found to be beneficial in any real and balanced sense of the word.

References

1. Adson, A. W., and Brown, G. E.: Malignant hypertension: report of a case treated by bilateral section of anterior spinal nerve roots from the sixth thoracic to the second lumbar, inclusive. Jour. Am. Med. Assn., 103:1115, 1934.
2. Allbutt, Clifford Sir: Diseases of the arteries, including angina pectoris. MacMillan Company, London, 1915.
3. Aschoff, Ludwig: Introduction—18. Arteriosclerosis. The MacMillan Co., New York, 1933.
4. Ayman, David: Heredity in arteriolar (essential) hypertension: A clinical study of the blood pressure of 1,524 members of 277 families. Arch. Int. Med., 53: 792-802, (May) 1934.
5. Baur, E., Fischer, E., and Lenz, F.: Human heredity. (Translated by Eden and Cedar Hall.) London, 1931.
6. Briggs, J. F., and Oerting, Harry: Vasomotor response of normal and hypertensive individuals to standard stimulus (cold). Minn. Med., 16:481, (July) 1933.
7. Cannon, W. B.: Bodily Changes in Pain, Hunger, Fear and Rage. D. Appleton & Company, New York. 1st Ed., 1915; 2nd Ed., 1929.
8. Cannon, W. B.: Recent studies on chemical mediation of nerve impulses. Endocrinology, 15:473, 1931.
9. Cannon, W. B.: The functional organization of the involuntary nervous system and its humeral mediators. Ann. of Int. Med., 6:1022, 1933.
10. Cannon, W. B., and Bacq, Z. N.: Studies on the conditions of activity in endocrine glands, xxvi.: A hormone produced by sympathetic action on smooth muscle. Am. Jour. Physiol., 96:392, 1931.
11. Cannon, W. B., and Uridil, J. E.: Studies on the conditions of activity in endocrine glands. viii.: Some effects on the denervated heart on stimulating the nerves of the liver. lviii. Am. Jour. Physiol., 58:353, 1921.
12. Cannon, W. B., Lewis, J. T., and Britton, F. W.: Studies on the conditions of activity in endocrine glands. xvii.: A lasting preparation of the denervated heart for detecting internal secretions, with evidence for accessory accelerator fibers from the thoracic sympathetic chain. Am. Jour. Physiol., 77:326, 1926.
13. Craig, W. McK., and Brown, G. E.: Unilateral and bilateral resection of the major and minor splanchnic nerves; its effect in cases of essential hypertension. Arch. Int. Med., 54:577, 1934.
14. Curtius, F., and Korkhaus, G.: Zwillingsstudien. Zeitschr. f. Konstitutionslehre, 15:229, 1930.
15. Dickman, W. J., and Michel, H. L.: Thermal study of vasomotor lability in pregnancy. Arch. Int. Med., 55: 420, (March) 1935.
16. Fahr, George: Hypertension heart. Am. Jour. Med. Sc., 175:453, 1928.
17. Fulton, J. F.: Canadian Med. Assn. Jour., 1932.
18. Fulton, J. F.: New horizons in physiology and medicine: The hypothalamus and visceral mechanisms. New Eng. Jour. Med., 207, 1932.
19. Hering, H. E.: Der Blutdruckzüglertonus in seiner Bedeutung für den Parasympathikustonus und Sympathicustonus. George Thieme, Leipzig, 1932.
20. Hill, L.: Jour. Physiol., 22: Proc. 26, 1898.
21. Hines, Edgar A. Jr., and Brown, George E.: A standard test for measuring the variability of blood pressure; its significance as an index of the prehypertensive state. Annals of Int. Med., 7:209-217, 1933.
22. Hines, E. A., and Brown, G. E.: Accepted by American Heart Journal. (In press.)
23. Karplus, J. P., and Kreidl, A.: Pflüger's Arch., 143: 109-127, 1911.
24. Koch, E., and Mies, H.: Zeitsch. f. exper. Med., 62: 551, 1928. Also, Krankh. forschung, 7:241, 1929.
25. Koch, Eb.: Ergebnisse der Kreislaufforschung, Band 1: Die reflektorische Selbststeuerung des Kreislaufes. Th. Steinkopff, Dresden, 1931.
26. McDowall, R. J. S.: The nervous control of the blood vessels. Physiological Reviews, 15:98-174, (Jan.) 1935.
27. Monakow, P. von: Blutdrucksteigerung und Niere. Deutsch. Arch. f. klin. Med., 133:129-152, 1920.
28. Moschcowitz, Eli: Cause of hypertension of the greater circulation. Jour. Am. Med. Assn., 93:347, 1929.
29. Nador-Nikitits, E. de: Sur l'étiologie de l'hypertension artérielle essentielle. Arch. de Mal. du Coeur, 18:582, 1925.
30. O'Hare, J. E., Walker, W. G., and Vickers, M. C.: Heredity and hypertension. Jour. Am. Med. Assn., 83:27, 1924.
31. Randall, L. M., Murray, S. E., and Mussey, R. D.: The "cold test" in pregnancy; a preliminary report of its use in prenatal care. Am. J. Obst. and Gynec., 29: 362, (March) 1935.
32. Rowntree, L. G., and Adson, A. W.: Bilateral sympathetic neurectomy in the treatment of malignant hypertension: report of a case. Jour. Am. Med. Assn., 85: 959-961, 1925.
33. Verschuer, Otmar von: Studien an 102 eineiigen und 45 gleichgeschlechtichen zweieiigen Zwillings—und an 2 Drillingspaaren. Ergebn. d. inn. Med. u. Kinderhk., 31:35, 1927.
34. Volhard, F.: Chap. 23. Elevated blood pressure. The Kidney in Health and Disease, Edited by Berglund, et al. Lea and Febiger, Philadelphia, 1935.
35. Weiss, Soma and Ellis, L. B.: Am. Heart Jour., 5:448, 1930.
36. Weitz, Wilhelm: Zur Aetiologie der genuinen oder vasculären Hypertension. Zeitsch. f. klin. Med., 96: 151, 1923.
37. Weitz, Wilhelm: Studien an eineügen Zwillingen. Zeitsch. f. klin. Med., 101:115, 1925.
38. White, James C.: The Autonomic Nervous System: Anatomy, physiology and surgical treatment. The MacMillan Company, New York, 1935.
39. Williams, G. D.: Chap. 19. Hereditary aspects of arterial expansion with relation to arteriosclerosis: Arteriosclerosis. (Edited by E. V. Cowdry.) The MacMillan Company, New York, 1933.

THE SERUM TREATMENT OF LOBAR PNEUMONIA*

Report on the Use of Felton's Serum in Detroit From February 25 to June 1, 1935

ALVIN E. PRICE, M.D.†
DETROIT, MICHIGAN

Antipneumococcus serum was first successfully used in this country by Cole in 1913. Because of the severe reactions encountered from the horse serum, this method soon lost its popularity with the medical profession. In 1924, Felton prepared a more refined and concentrated product for types I and II pneumococcus, and since that time, "Felton's Serum" has become one of the most effective agents for the treatment of pneumonia.

The literature of the past decade abounds with reports showing the value of serum treatment. It is not the intention of the author to review this work. In a recent article Belk[1] has published a statistical review of the specific treatment of lobar pneumonia, and the reader is referred to this work for a summary of the results obtained in the past.

During the past winter, the mortality of pneumonia in the city of Detroit was exceedingly high. In the city hospital that of lobar pneumonia was 48 per cent. During this period the incidence of type I and II infections was also higher than usual. Because of this, specific serum treatment was thought desirable. A supply of Felton's Serum was accordingly placed at the disposal of the medical profession by the Department of Health for use among the indigent and semi-indigent people of the city.

The use of this serum was confined to patients who were hospitalized in one of the larger hospitals of the city. No cases were treated in whom the duration of the illness was greater than ninety-six hours. In the majority of instances this was seventy-two hours or less. The predominating age group was twenty to forty years, only two children under ten being treated. Seventy-five per cent were white and the remaining 25 per cent were colored. In all seventy-eight patients received serum.

General Considerations of Serum Treatment

Indications for Serum Treatment.—Therapeutic sera have been prepared for most of the thirty-two types. Of these, four (types I, II, VII, and VIII) are of sufficient potency to be of practical value. Serum treatment is therefore indicated in all cases of lobar pneumonia from whom pneumococci belonging to either of these four types have been isolated. The following exceptions are recognized:

1. Children under twelve years of age.

   Lobar pneumonia in children between two and twelve years of age is a relatively benign disease, having a mortality of 5 per cent. While the predominating organism in this age group is type I pneumococcus, the benignity of the disease and the potential danger of horse serum sensitization, make the use of serum of questionable value. In infants under two years, the severity of pneumonia approaches that of adults. In this group, type XIV is the predominating organism. Nemir[5] succeeded in shortening the course of the disease in eighteen treated cases with a type XIV serum, but the potency of this serum is questionable and its use is open to the same objections as in the older age group just described.

2. Patients over sixty years of age with type II infections.

   Experience has shown that the use of serum in this age group is of no value as a therapeutic agent.

3. Patients ill for longer than ninety-six hours.

   It has been repeatedly demonstrated that the end-results of serum therapy vary directly with the duration of the illness before treatment, *i.e.*, the earlier in the course of the disease the serum is given, the better are the results. Seventy-two hours is the desirable time limit, but it should not exceed ninety-six hours.

*Read before the Noon-Day Study Club of the Wayne County Medical Society.

†Dr. Alvin E. Price is a graduate of the University of Michigan, College of Literature, Science and Arts, A.B., 1923; University of Michigan, College of Medicine, M.D., 1927. He is a member of the Staffs of Harper, Receiving and William Seymour Hospitals. His practice is limited to Internal Medicine.

Contra-indications to Serum Therapy.—The following conditions constitute definite contra-indications to serum therapy:

1. Pulmonary edema; a state of shock and extremis.
2. Allergic history, as follows: sensitiveness to horse serum (positive skin or conjunctival reaction); asthma, hay fever, urticaria, eczema, food sensitiveness, angio-neurotic edema, etc.
3. History of previous injection of horse serum, as toxin-antitoxin, tetanus prophylaxis, diphtheria antitoxin, etc.

In cases belonging to either (2) or (3) above, in whom a bacteremia exists and in whom the prognosis is obviously poor, serum may be cautiously used after desensitization has been accomplished. (q. v.)

Sputum Typing of Pneumococcus.—The Neufeld or "Quelling Reaction" is the method of choice because of its speed and accuracy. It is based upon the principle that a swelling or ballooning of the capsule occurs when the organism is mixed with the homologous type antiserum.

Technic.—To a small fleck of sputum (not saliva) on a slide, one drop of type I antipneumococcus rabbit serum is added and mixed thoroughly. To this mixture, a drop of Loeffler's alkaline methylene blue is added and the mixing continued. The same procedure is then repeated with the other type sera using separate flecks of sputum for each type. The resulting mixtures are then examined under oil after covering with cover slips. When homologous type antiserum is used, the blue staining pneumococci are enclosed in a sharply defined, ballooned out capsule. With heterologous sera, a narrow, unstained refractile rim surrounds the organism. Within recent years, typing sera have been prepared for all thirty-two types of pneumococci.[2]

Administration of Serum.—Before administering the serum, certain precautions must be observed.

Skin Testing: This is done intracutaneously by means of a tuberculin syringe and very small needle. Five hundredths of a cubic centimeter (0.05 c.c.) of a 1:10 dilution of horse serum are injected into the skin of the flexor surface of the forearm. The presence of an urticarial wheal with an erythematous flare developing in fifteen to twenty minutes indicates a positive reaction.

Conjunctival Test: This is performed by instilling a drop of horse serum (1:10 dilution) into the conjunctival sac of one eye and then observing. This test should be done at the same time as the skin test. Injection of the conjunctiva constitutes a positive reaction. Should this be marked, it can be relieved by instilling a drop of 1:1000 adrenalin chloride solution.

Interpretation of Tests: A positive conjunctival test usually indicates a sensitive (allergic) individual in whom serious reactions may result from the use of serum. A positive skin test, in the absence of a positive conjunctival reaction or of an allergic history, is an indication for extra caution. Under the latter circumstances serum should only be given after the patient has been *desensitized* (q. v.). A negative skin or conjunctival reaction usually indicates that no anaphylactic reaction will occur although exceptions to this have been noted. In the present series, two cases of anaphylaxis occurred following negative skin tests.

Adrenalin: This should be readily available in a syringe before serum treatment is started. Its use is indicated if wheezing, cyanosis, stenocardia or collapse develops.

Desensitization: If the administration of serum is considered necessary irrespective of evidence for horse serum sensitivity, it must be given in the following manner: In the presence of a moderate skin reaction, 0.5 c.c. to 1 c.c. of serum should be given intramuscularly and if no untoward reaction occurs in two hours, the intravenous injection may be cautiously undertaken. When a more severe form of sensitivity is indicated by a prompt and extensive reaction, or if for other reasons one may suspect definite horse serum sensitivity, the antiserum should be administered fractionally. This may be accomplished by injecting 0.5 c.c. intramuscularly, and doubling the amount every half hour until the full dose has been administered. Subsequent treatments may then usually be given without difficulty.

Dosage.—The unit of dosage is the *"Felton's Unit,"* and is that amount of serum which will protect a mouse against one million virulent pneumococci. According to the method of Finland and Sutliff[3] the serum is given fractionally at two hour intervals, starting with 5 c.c. (approximately 15,000 units). Following this in two hours, 25 c.c. (75,000 units) are given, and two hours later 45 c.c. (125,000 units). In

type II cases this last dose is repeated three to four times at two hour intervals. After a lapse of eight to twelve hours or more, further doses are given if the clinical response is not satisfactory. Using this method a total of 175 c.c. (540,000 units) type II are given in six doses within twenty-four hours after the institution of treatment. Less than this quantity is usually required in type I cases.

In the series herein reported smaller quantities were usually used. In most cases, 40,000 units were given intravenously as the initial dose and one-half (20,000 units) this amount given four hours later. The latter was then repeated in four to six hours and again in six to eight hours if the temperature was not normal. The maximum dosage required was 180,000 units; the minimum, 40,000 units, with an average of 97,000 units. Type II has usually required more than type I in most reported cases, although no appreciable difference was apparent in this series. The only type VII case treated required 40,000 units. If no improvement has occurred after forty-eight hours of treatment, the serum should be discontinued.

Parsons and Sutliff[6] regulated their dosage by the presence (or absence) of agglutinins in the peripheral blood of the patient. Sabin's slide method was used. After the first four hours of treatment, a drop of blood is mixed with a drop of homologous antigen (suspension of homologous pneumococci) and then examined under the microscope after drying and staining. The presence of agglutination indicates that more serum (passive agglutinins) is unnecessary at that time. This procedure is repeated every two hours during the first day, and at four hour intervals thereafter as long as toxicity is present. The absence of agglutination at any time is sufficient indication for more serum. By means of this method, a saving in the total amount of serum required is effected.

Technic of Administration.—It is generally agreed that horse serum in any form is best given diluted with physiological saline solution 1:10. This method was employed in all the cases of this series. A total volume of 250-300 c.c. was used. After insuring a free flow of saline into the vein the serum, warmed to body temperature and free from coagulation or precipitation, is mixed with the saline and the solution then slowly introduced. A minimum of twenty minutes should be allowed for each injection. The patient must then be carefully observed for reactions during a period of thirty minutes after the treatment has been completed.

If circumstances make dilution in saline impractical, such as giving it in the home, the injection must be carried on very carefully. The smallest amount possible is injected into the vein, interrupting the injection with the needle in place for about a minute. This is repeated for about five minutes, during which time only a few tenths of a cubic centimeter are introduced. From then on, the injection should be slowly completed during the next ten to fifteen minutes.

Reactions.—Reactions following the use of serum are of three types, namely, anaphylactic, thermal, and serum sickness.

Anaphylactic reactions occur either during or within a few minutes after injection. They are characterized by wheezing, substernal oppression, cyanosis, etc., and call for the immediate administration of adrenalin. Serum should be discontinued at once. Very mild reactions, characterized by flushing of the face, nausea and vomiting, etc., usually require no treatment. With these mild symptoms, the injection of the serum may be cautiously continued. The anaphylactic type of reaction is prone to develop in patients having an allergic history or those who have at some time received horse serum in some form.

Thermal reactions occur in from fifteen to ninety minutes after an injection and are of no serious consequence. The temperature may rise one or two degrees following a chill. Treatment is symptomatic, consisting of the application of external heat and the use of analgesics for comfort. Adrenalin is of no value in this type of reaction.

Serum sickness occurs in about one-third of all cases treated. It is usually manifest on the seventh to the ninth day, although it may develop as early as the fourth and as late as the twenty-first day. Clinically it is characterized by fever, urticaria, arthralgia and adenopathy. Treatment consists of adrenalin or ephedrine with local applications of soothing lotions (mentholated alcohol, et cetera).

Clinical Results of Serum Therapy

The most striking symptomatic effect of serum therapy is the decrease in *toxicity*.

This becomes apparent in four to six hours after the treatment is started. In this series it was more frequently observed in Type I cases. Others have failed to notice any difference between the two clinical types. A clearing of the mental state is also observed with frequent relief of dyspnea and lessening of cyanosis. Pleural pain, cough and abdominal distention are not affected.

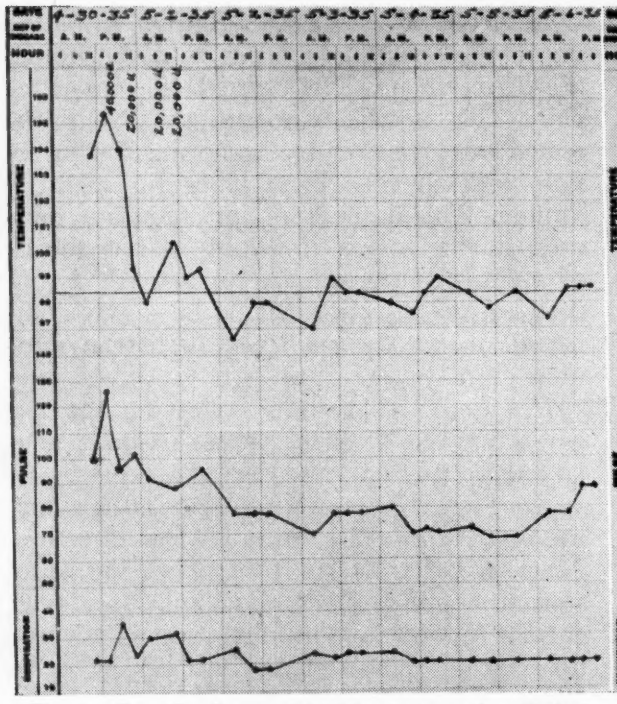


Fig. 1. Type I. Lower right lobar pneumonia. Patient was ill forty-eight hours before administration of serum.

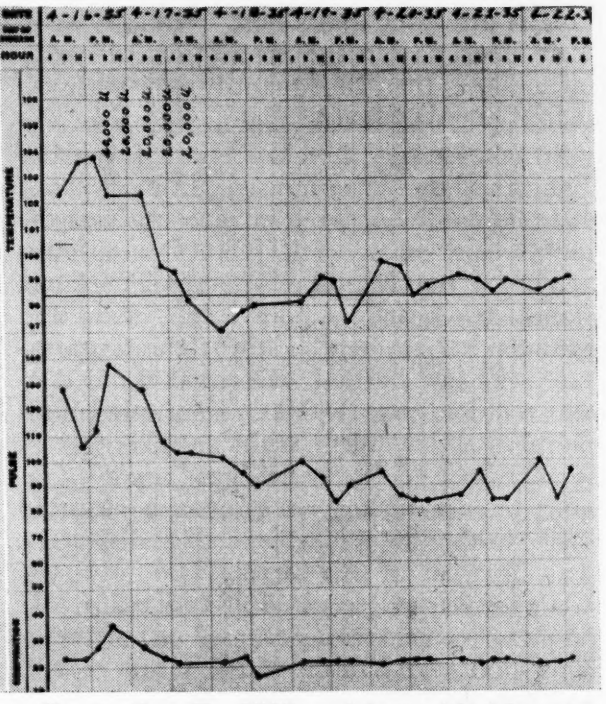


Fig. 2. Type II. Middle and lower right lobar pneumonia. Patient was ill twenty-four hours before administration of serum.

The temperature effect is dramatic in many instances. This was especially true in the Type I cases of this series. A drop of 1° to 4° in two to four hours after the initial treatment was frequently observed. (Figs. 1 and 2.) In a few cases the temperature remained down after the first or second injection of serum, but a secondary rise occurred in most instances if more serum was not given. Delay in giving subsequent doses until after secondary rises in temperature occurred, usually resulted in prolonged defervescences. Second and often third injections were accordingly given at four to six hour intervals regardless of the temperature. In Type II cases, the effect on the temperature was usually less striking.

The *pulse* and *respiratory rate* follow the temperature closely, the latter being the last to drop in most cases.

The *physical findings* were not appreciably altered as a result of serum therapy, although earlier resolution has been reported by some. Periodic x-ray studies were not made in these cases, so the effect of serum on the consolidated lung cannot be stated. Helm et al[4] made daily roentgenologic studies on several patients. In those receiving serum thirteen hours after the onset of the disease, there was noted a rapid resolution of the consolidation as shown by x-ray. In those receiving serum as late as thirty-six hours, there was observed an extension of the process from the x-ray standpoint, even though a clinical crisis and recovery had occurred.

The *leukocyte count* was observed to drop within twenty-four to forty-eight hours after the temperature became normal. In one case in which a severe anaphylaxis occurred, the total white count dropped from 18,500 to 2,500 after the serum was injected. Pentnucleotide was administered (10 c.c. twice daily), with a return of the original count in about six days. This incident serves to emphasize the value and necessity of frequent leukocyte counts, a fall usually indicating severe damage to the hemopoietic system of the body, and a rise suggesting either an extension of the pneumonic process or the development of complications.

Extensions.—It has been reported by some that extension of the pneumonic process to other lobes does not occur after serum has been administered. In the series of cases herein reported it was observed in three instances. In a larger group of non-treated cases of all types, there were eighty-four in whom definite extension to other lobes had occurred (18 per cent).

Complications.—Except for the complications incident to the horse serum (serum sickness, etc.), the incidence of complications in serum-treated cases does not differ appreciably from that which exists in those not receiving serum. In the group of seventy-eight cases herein reported, there were three cases of *empyema,* an incidence of 3.8 per cent. This is slightly higher than the incidence of empyema in a much larger series of controls (2.6 per cent). Simple *pleural effusion* was present to the extent of 4.7 per cent in the control group, but was found in only one case of those treated with serum. *Multiple lung* abscesses developed in two cases following the use of serum. Both patients subsequently died. *Jaundice occurred* to a mild degree in three instances. In the control series, it was found in ten cases (2 per cent). *Cardiac complications* were rare. *Auricular fibrillation* was present in only one serum-treated case. No case of pericarditis developed during the course of serum therapy, whereas seven were found among the control series.

Mortality

In the compilation of mortality statistics in this series, twenty-one cases were excluded from consideration. Eight of these received serum later in the course of their disease than the optimum time limit (*i.e.,* longer than ninety-six hours), and hence their inclusion did not seem justified. The remaining thirteen were among the earliest cases treated before the typing by the new Neufeld method had been perfected. Some of this latter group had a satisfactory response to serum, but all were excluded on the basis of unsatisfactory typing. There remained fifty-seven cases upon which mortality statistics were based. Of this number, twenty-seven were Type I, twenty-nine Type II, and one Type VII. Of the Type I cases five died. In the Type II cases, seven died. The only Type VII case treated had a satisfactory response. The accompanying table gives the mortality figures.

Type	Mortality Untreated	Mortality Treated	Reduction in Mortality	Lives Saved Per 100
I	36%	18%	50%	16
II	33%	24%	27%	7

Analysis of Fatal Cases.—In over half the twelve patients who died, there was some factor, other than the pneumococcic infection, which contributed to the fatal outcome. A strong alcoholic history was present in six while a negative history was obtained in all the other treated cases. Seven of the fatal cases were over forty years of age. Auricular fibrillation was present in one case, and a lung abscess developed in another. One of the fatalities occurred in a young man whose pneumonia developed post-operatively after a perforated duodenal ulcer. In five cases, the initial leukocyte count was 10,000 or under, an indication of poor resistance on the part of the patient.

The extent of involvement appeared to bear no relation to the mortality. In one-half of the fatal cases, only a single lobe of one lung was involved. Of the remaining six, four had two lobes, and two, three lobes involved in the pneumonic process. One-half the patients in the fatal cases received their first injection of serum within the first forty-eight hours of their illness, the remaining six receiving it after this time.

Economic Considerations

The average duration of hospitalization of the serum-treated cases (uncomplicated) in this series was 12.6 days. In contrast to this the untreated (uncomplicated) case remained in the hospital on an average of 14.9 days. With all other existing conditions the same in both groups. the difference between the two periods of hospitalization (2.3 days) can be justly attributed to the use of serum. From an economic standpoint, this represents a saving in hospital cost, and should be deducted from the total expense of the serum. In the present series, this savings amounted to $9.66 (cost per day, $4.20).

The average cost of serum per patient was found to be $43.83.* If the saving in hospital cost ($9.66) is deducted from this, the final cost of serum per patient was $34.17.

*The serum used in this work was supplied to the Detroit Department of Health by Parke Davis and Company at the wholesale price.

Summary

The value of Felton's Antipneumococcus Serum is again demonstrated by the series of cases herein reported. There was observed a significant reduction in mortality in types I, II and VII cases and also a definite symptomatic improvement in the majority of patients.

The use of the serum should be confined to cases having the specific type pneumococcus infection and it must be given within the first ninety-six hours of illness to be effective. Children between the ages of two and twelve do well without serum, and hence its use is not indicated. The usual precautions observed in the administration of any form of horse serum should obtain in the use of antipneumococcus serum. The dosage employed has varied in different clinics, but in all there is a general agreement that large quantities should be given within the first twenty-four hours of treatment.

The reduction in mortality and the lives saved more than compensate for the additional cost of the serum.

Bibliography

1. Belk, W. P.: The specific treatment of lobar pneumonia. Jour. Am. Med. Assn., pp. 868-871, (Sept. 14) 1935.
2. Cooper, G. M., and Walter, A. W.: Application of the Neufeld reaction to the identification of types of pneumococci. Amer. Jour. Pub. Health, 25:469-474, (April) 1935.
3. Finland, M., and Sutliff, W.: The specific treatment of pneumococcus Type II pneumonia. Jour. Am. Med. Assn., 100:561-566, (Feb. 25) 1933.
4. Helm, J. B., Ferguson, D., and Noble, H. J.: Observations of pneumonia treated with specific antisera. U. S. Nav. M. Bull., 32:147-151, (April) 1934.
5. Nemir, R. L.: The treatment of pneumonia in infants and children with antipneumococcus serum. Jour. of Ped., 3:827, (Dec.) 1933.
6. Parsons, J., and Sutliff, W.: Specific serum treatment of Type I lobar pneumonia. Amer. Jour. Med. Sc., 186: 52-61, (July) 1933.

THE ART OF MEDICAL HISTORY TAKING

HARRY C. SALTZSTEIN, M.D.†

DETROIT, MICHIGAN

In the course of looking over many clinical records in hospitals and dispensaries, several impressions about the written histories stand out.

1. Histories in different diseases rank differently in importance when establishing the diagnosis. Histories of certain clinical diseases are regularly better recorded than others.

2. There is a vast difference in the skill with which different physicians take histories.

3. A wealth of material is stored in hospitals and outpatient charts, but is not fully utilized. This material offers extensive opportunities for systematic observation of end results and clinical research.

The following are set down as more or less pertinent observations illustrating these points:

1. Differences in value in different diseases.

Cancer of the breast is an easy history to obtain. The chart usually records the onset of the lump, and its size at the time of examination. There is not always a history of its gradual development, and preceding lactation, childbirth events, etc., are sometimes incompletely recorded. The lump is so striking that it is much more important than the history.

Exophthalmic goitre is generally such a clear cut story, with such definite time of onset of weakness, nervousness, tremor, that "he who runs may read." The charts show this. There is usually a concise, clear cut recital of the development of this disease. This is not always true of the adenomas. Mild cardiac symptoms which have been slowly progressing for many years and which are, clinically, very important, may be missed unless the observer is on the lookout and quite familiar with the clinical entity. The atypical forms, where the question of myxedema or neuro-circulatory asthenia enters, frequently tax the skill of a most experienced observer.

Acute appendicitis histories are clear cut, but frequently taken hurriedly, and many interesting, if not essential, points in the brief few days' illness are missed. Thus, the frequency and severity of vomiting, subsidence and recurrence of pain in a chronological fashion, associated digestive disturbances, may be recorded in scanty fashion. Most important, the antecedent history of

†Dr. Saltzstein is a graduate of Johns Hopkins Medical School, 1914. He is Junior Surgeon at Harper Hospital and Surgeon at North End Clinic.

previous attacks, or months of mild, gaseous indigestion, suddenly appearing constipation, soreness on exertion, etc., which so many of these patients have, is frequently missed.

The symptoms of chronic appendicitis are frequently more conspicuous than the local examination. Even x-ray, operative findings, pathological microscopic report are not as diagnostic as is the careful analytical evaluation of the clinical history. Colonic stasis (which can distend the cecum, the thinnest part of the bowel), vasomotor imbalance, abdominal ptosis, the drag of a relaxed mesentery, sexual or other hidden complexes which cause abdominal pain must be excluded, to say nothing of all other abdominal organic causes of pain in the right lower quadrant. How carefully this is done makes, to a great extent, the difference between whether the treatment cures the patient or not. No one learns this by any other method than extended practical experience. There are no short cuts. There is no doubt that many more appendices are removed than should be, but also there is no doubt but that chronic appendicitis can mimic almost any abdominal disease; in patients under five and over fifty, without acute attacks, without even pain in the side. It is not enough to know the clinical course of appendicitis; knowledge of the earmarks of other diseases which simulate it is essential in history taking, to avoid a high percentage of error. Andreson figured out that of those patients who sought his gastrointestinal clinic, complaining of abdominal distress, 15 per cent had had their appendices out without relief. In his private practice, the percentage was higher.

A sharp, clear cut history of gall stone colic is only a third-year medical student's exercise in physical diagnosis. However, taking a history in a mild case, frequently without acute seizures, with flatulence, obesity, in a woman nearing the menopause, after years of the wear and tear of raising a family, with pelvic and abdominal relaxation, is one of the most difficult tasks in all medicine. The chief difficulty is in sifting what is chaff in the harassed woman's multiple complaints from what are actual symtoms of gall bladder distress. The commonest fault is that these are not evaluated in a chronological order. The premium on accuracy in these early cases—and the history is the chief diagnostic portion of the consultation—before there are colics, when a positive x-ray is often just another complicating factor, is high. Successfully operated upon, there is a grateful patient, who has come through the operation with little more distress than from an appendectomy, and has been spared years of suffering of which she scarcely knows. Wrong diagnosis means a worse neurotic than before, plus a tender scar, and a chance of a later ventral hernia.

Gynecologists become so proficient in palpatory pelvic examination that the clinical history, to them, is often secondary. The charts will easily show this. I remember as an interne, a long while ago, that when on one occasion the operation showed an unsuspected malignant finding, the gynecologist-in-chief of the hospital went back over the chart to see what he had found on pelvic examination—not what symptoms the patient complained of. I also remember that he seemed satisfied when he determined that the pelvic findings recorded on the chart were relatively correct. The sparse data in the clinical history, which, better taken, might have corrected the faulty interpretation, made no impression.

No class of patients is as willing to be operated upon as those complaining of pelvic distress. Whether the patient with moderate sized fibroids, or persistent pains in the side, etc., gets well from the operation depends in large measure upon how accurately the clinical symptoms are correlated with the findings on examination. A large number of fibroids (as also pelvic inflammations) owe their symptoms to associated adhesions and accompanying disturbance of intestinal peristalsis, which the clinical history, rather than pelvic examination, will disclose. Many pains in the right side, in these women, have no basis in actual pathology and will not be benefited by laparotomy. These histories do not take a great length of time to elicit, generally speaking, but demand an experienced understanding of the different symptomatologies involved, and, especially for the past few years, an increasing understanding of the different types of female habitus and endocrine makeup.

Urological conditions are conspicuous for the fact that many slight differences in symptoms may be diagnostic of the location of the lesion at different sites along the uro-

genital tract, but I doubt whether any but experienced urologists are very familiar with these ear marks. It is too easy to have the patient cystoscoped, and, by and large, these conditions are not common enough for everyone to know them intensively.

The list could be extended indefinitely, illustrating different values which may be placed upon history taking in different diseases, and the most frequently recurring omissions. Surgical conditions have been taken because they are more familiar, but the whole gamut of medical illnesses could be discussed with the same interest. In some cases the examination is much more important than the history. In certain diseases, the typical case shows a clear cut history, but if the case is not typical, history is difficult to obtain. In others, accuracy and completeness are matters chiefly for time and patience. In still other diseases, knowledge of the different conflicting disease forms is essential and more important.

2. What are the chief faults in clinical histories as seen on the charts?

First, lack of precise chronological recital of the development of the disease picture. How long do the attacks last? Is there a free interval? How severe were they one year ago? Just when did the entire picture get worse? When did the loss of weight start?

"Patient first noticed pain in both legs along the tibiæ up to the knees, and required canes for ambulation. Onset shortly after a heart attack.

"Leg pain comes on after exercise, unrelated to position or type of activity. Sometimes it comes on while walking and patient has to stop at once. Feet have been icy cold for the past four years."

The clinical history here is concisely written and a good word picture, but one wonders just when the pains got worse, how severe they were and how far could she walk before claudication set in two years ago, one year ago, and now. Are the pains more or less constant now and when did they become so? In short, what was the chronological development of the disease? Voluminous charts from well organized institutions, with multiplicity of special examinations and consultations can be perused without finding the answers to these simple questions.

Second, lack of detailed story of the onset of the disease. It is not appreciated sufficiently that many complicated disease states can be unravelled by a clear sequence of the initial symptoms. The patient with continuous abdominal pain presents a less confusing story if it is ascertained that two or three years preceding, at the onset of the illness, there were free intervals, and relief from pain after the ingestion of food. The brain tumor, with a confusing complexity of manifestations due to generalized increase in intracranial pressure may be simplified by a detailed analysis of the early signs, which probably will contain some focal and localizing symptoms.

Third (as has been indicated in the preceding section), lack of familiarity with the essentials of the disease picture and its separation from other entities.

Note the following description of the pain in chronic urethritis in women:

"The chief complaint may be frequency of urination, with burning, or the patient may complain only of discomfort in the region of the urethra, and of a sense of pressure low in the pelvis, which initiate a rather constant desire to void. Again, the patient may complain of terminal burning and pain on urination, associated with marked frequency and nocturia. In short, the symptoms of one patient are seldom the same as those of another and various combinations may be present. . . . One woman complained only of suprapubic distress which was relieved by drinking enough water to make her urinate. In another case, pain was referred 2 cm. to either side of, and anterior to the urethra."

Accuracy like this demands an intimate understanding of just what complaints many persons with this condition had. It cannot be mastered without considerable experience in taking such histories; but note how diagnostic it may become.

Fourth (as also note preceding), the ability to extract from the wandering, worried, frequently uneducated and unclassified impressions of the patient a clear-cut story without bias and free from leading inquiries.

"I know of no more delicate adjustments," said Dr. W. J. Mayo in one of his clinics, "than that of the physician taking the history of a neurotic patient." Patience, sympathy, analytical observation, the ability not to waste time, are the desiderata. Most disease stories can be put down on one-half to two-thirds of an ordinary 8x11 chart sheet. Two or three closely written pages of variegated complaints may represent much effort, but does not necessarily mean completeness or accuracy. The young doctor's educational background stands out in these comparisons, and whether he has trained himself to think logically, or sets

down loosely connected impressions is readily apparent. Dictating the entire history later, either to a stenographer or into a dictaphone, is no aid to accurate recording of observations. If the entire history is held in mind until the end, an item may be missed, or a point that should be reclarified may be slid over or neglected.

Fifth, when looking over charts for possible complications, or progress, it may surprise one to find that with respect to the patient's actual condition, the nurses' notes, if put down with a bit of understanding, are generally of much more value than the internes'. "Condition good," "convalescence uneventful," says the young M.D., or "condition poor," "patient cyanosed," "exitus imminent." The nurses' notes may record that cough started on the second day and continued with expectoration; or vomiting, which later became fecal, started the third day. One can get a good clinical impression of whether the patient died of bronchopneumonia or peritonitis from the nurses' notes plus the temperature curve and drug sheet, but rarely are physicians' objective observations of complications put down with sufficient accuracy and detail to be as valuable.

It has been stated that the history and physical examination constitute 85 per cent of diagnosis—laboratory and other aids are important or essential in only 15 per cent of the patients we see. Of this 85 per cent, the physical examination (which should not take very long) represents perhaps one-third, and the history (which takes much longer to obtain well) fully two-thirds.

3. Opportunities for systematic observation of disease are contained in hospital charts, but are not used to their full value. I think we are gradually emerging from the era in medicine which Dr. Fishbein has described as the "Shift from brains to glassware," *i.e.*, when every secretion in the human body was subjected to an ever increasing number and complexity of laboratory tests. Study of large or small numbers of clinical histories is increasingly in vogue right now in scientific medicine. One needs only note how much of the literature of allergy consists of case histories or their analyses. Alvarez recently devoted a good deal of time to inquiring from several hundred individuals just what foods they could not eat, and thought that such simple inquiry had been long neglected by gastro-enterologists. After multitudinous complicated explanations for agranulocytic angina were advanced, Madison and others noted that the disease appeared shortly after amidopyrin became popular, and appeared frequently in the families or associates of physicians —persons who might more frequently take pyramidon for a headache than others.

Hospital and dispensary records are full of information which can be studied and correlated with much profit. "I can make a discovery any time I want to spend a few hours in my collection of 30,000 case records of malignant disease," Dr. Bloodgood often said half humorously, and the way in which Dr. Geschickter and others have systematically made use of that storehouse of clinical information in recent years is proof that it does not depend on one individual alone. Hospital records have been used extensively in the matter of major surgical end-results, perhaps because the surgeon must of necessity be more sensitive to his cures and failures, but in other branches, minor surgery, ambulatory medicine, et cetera, the field has hardly been touched.

The early story of rheumatic disease from 100 case records, duly classified into types, or the same for coronary disease, or the end-results of a long series of these cases observed and treated under controlled conditions, are titles which any editor would be interested in. Much of our therapeutics is still empirical; the patient improved, or we "got results." What clinical differences are there between the dozen or so different barbiturates, which are so fetchingly offered to us, and which we use so extensively? Is the combination of a barbiturate with amidopyrin more toxic than each drug separately? What differences are there in clinical end-results between the different forms of applying heat in chronic arthritis? The different methods which have been recommended for the treatment of furuncles? (Pastes, salves, ointments, wet dressings, bacteriophage, tin, zinc, x-ray, vaccines, autoginous serum, toxoid, heat, "scientific neglect.")

These are simple questions which immediately occur, for which (so far as we know) final answers are not available in the literature.

One's clinical impressions of many cases after a lapse of time are notoriously inaccurate. Controlling them statistically makes for accuracy of thought and much more

rapid development of that clinical sixth sense which can be described as the ability to prognosticate the future course of any single patient's illness.* I once had the opportunity to ask about fifty surgeons in several cities how many cases of cancer of the breast they had operated upon during the previous year, and then obtained totals from the records of the respective hospitals. The older surgeons would not commit themselves without looking up the figures. The impressions of the others were grossly inaccurate, and usually the number was overstated. If that is so, how accurate are the impressions of the number of breast cancers which any one surgeon has cured in five years, unless accurate follow up has been secured?

Examination of 100 hospital histories of cancer of the rectum showed that loose bowels, tenesmus, rectal irritation preceded bleeding by several months in 50 per cent of the cases—a fact well known, but not always thought of by surgeons who regularly see these patients after several months of bleeding from the rectum. Likewise, any large group of gastric cancer charts will show 20 to 25 per cent where there is a history indistinguishable from ulcer, frequently including two or three more or less extensive ulcer regimes, which will prove to anyone that whatever one thinks about the relative frequency of ulcer and cancer in the stomach, the important thing is how many are indistinguishable from ulcer clinically.

Collating material available on charts does not necessarily demand large numbers of records, though quantity is necessary for certain facts. There must be accuracy, a definite purpose in view, discerning and discriminating sorting, adequate controls, and an appreciation of the limitations of this sort of endeavor.

A. Graeme Mitchell† has just issued a plea for better statistical treatment of clinical research—accurate calculation of the probable error, the amount of material necessary to prove certain points, et cetera.

Many case histories are published from time to time in state and national medical journals, and, more particularly, those which are well selected should be printed. They form the basis for many of the contributed articles which are published. Case histories are often submitted for publication in a very slipshod, haphazard way. In the preparation of a case history for publication, the writer should take as much care as in the composition of an original paper. Sentences should be complete and not left without a subject, or, as sometimes occurs, without a predicate. No abbreviations should be used that are not generally understood. In other words, the author should avoid a syncopated library style. Purely irrelevant material should be omitted.

Thus the patient's history is of importance second to none, in the clinical practice of medicine. As an art, it can be painstakingly cultivated, with both profit and satisfaction. The varying degrees of importance to be attached to it, the differences in skill manifested, the opportunities for observation and clinical research afforded by written histories tax any physician's ingenuity and ability.

*George R. Minot (Clinical Investigation, Jour. A. M. A., 105:641, (Aug. 31) 1935) discussing case history reports, has this to say: "Such work sharpens powers of observation and tends to prevent conclusions based on mere impressions and leads to obtaining facts." Again, "Collecting proper information over long periods of time so as to formulate knowledge of prognosis, which in many conditions is imperfect, represents a simple type of investigation. There is need for more accurate work of this sort to formulate rules to forecast the patient's future."

†Critical interpretation of clinical observations, Jour. A.M.A., 105:241, (July 27) 1935.

DIAGNOSIS OF PITUITARY DISEASE*
An Analysis of Twenty Cases

AARON FARBMAN, M.A., M.D.†
DETROIT, MICHIGAN

Recent studies of the pituitary gland, both in its normal and abnormal states, have developed a much simpler way of detecting disorders of this gland. Much remains yet to be learned, and innumerable problems present themselves for solution. Nevertheless, with knowledge at hand, provided we are endocrine-conscious, in many cases earlier diagnoses ought to be made. Many pituitary disorders still go unrecognized for too long a time. This is not necessarily due to a lack of knowledge of the subject, but in general to a lack of attention to the pituitary gland during an initial history and physical examination.

A careful review of the literature of the past twenty years shows great progress in definite knowledge about the gland. Classification has been greatly simplified so that it can be generally used. Certain symptoms and physical signs during the course of an examination can at once suggest the possibility of pituitary disturbance.

We are giving an analysis of twenty cases illustrating various types of pituitary disorders showing what signs and symptoms during an initial history and physical examination suggest the presence of disorder.

Present day knowledge of this interesting gland has been derived from several sources:[11] (1) Comparative and experimental zoology, (2) clinical pathology, (3) histological cytology, and (4) biochemistry. A discussion of all the perplexing problems, all of the experiments and pathological findings is beyond the scope of this article. We refer the reader to our bibliography and particularly to the works of Englebach and Cushing,[9,10] for complete discussion of these problems and experiments. Here we only wish to give the facts which are definitely known and which will aid in recognizing pituitary disease more easily.

From the sources mentioned above we can make a simple histological and physiological classification.[1,2,5,9,10,11]

A. Anterior Lobe
  1. Chromophilic cells
    (a) Eosinophilic—
      (1) Influences growth development
      (2) Influences thyroid and adrenal activity
      (3) Adenomas produce acromegaly and other evidences of hyperpituitarism
    (b) Basophilic—Influences sex development
      (1) Adenomas described by Cushing produce sex disturbances and other evidences of hyperpituitarism
  2. Chromophobic—no known function
    (1) Form the most frequent adenomas of pituitary and are associated with hypopituitarism of posterior lobe

B. Posterior Lobe or Neuropituitary Influences
  (1) Fat metabolism
  (2) Carbohydrate metabolism
  (3) Water intake and output
  (4) Smooth muscle stimulation
  (5) Galactogogue action

Many investigators believe that the above functions of the posterior lobe are controlled by centers in the hypothalamus[7,8,15] and others believe that they are controlled by the gland itself.[9,10,11,18] Both schools show quite conclusive evidence in their favor, and a great many controversies and unsettled problems have arisen as a result of this conflicting evidence. However, we do know that administration of the extract of the posterior pituitary gland will show a definite effect on any of the above functions, and that is all the general clinician needs at present for practical purposes.

Besides the above facts, we now have very definite evidence that the pituitary gland has a profound effect on at least the thyroid and adrenal glands. In acromegaly, repeated post mortem examinations have shown a hyperplasia of both the thyroid and adrenal. Clinically, we have found in these cases an increased basal metabolic rate and hypertension. On the other hand in chromophobic adenoma, post mortem findings are hypoplasia of the thyroid and adrenal, and clinically, the findings are usually low blood pressure and a low basal metabolic rate. In fact one of our cases of chromophobic adenoma showed such a profound effect on the adrenal gland clinically that at first Addison's disease was suspected. This also

*From the Department of Endocrinology of the North End Clinic, Detroit, Michigan, under the direction of William Henry Gordon, M.D.

†Dr. Aaron Farbman is a graduate of Columbia College, A.B., 1923; Graduate School, M.A. in Chemistry 1924; College of Physicians and Surgeons, Columbia University, M.D., 1928; Diplomate of the National Board, 1929. He served his internships at Mt. Sinai Hospital, New York, and Harper Hospital, Detroit; Resident, Cottage Hospital, Grosse Pointe, Michigan; Surgical Staff, North End Clinic.

brings to our attention a case reported in 1923, with interesting findings, but in the light of our present knowledge, a wrong interpretation. That writer[20] reports a case of hypothyroidism (atypical myxedema) in which there was found at post mortem, an enlargement of the anterior lobe of the pituitary, the cells of which did not stain. He believed that this case was one of hypothyroidism with compensatory hyperpituitarism. The most likely state of affairs was a chromophobic adenoma of the pituitary producing or influencing hypothyroidism.

From the above facts it can readily be seen that a physiological and histological classification of pituitary disturbances is indicated rather than a classification of types such as diabetes insipidus, acromegaly, Froehlich's syndrome, Simmond's cachexia, Lorain-Levi type, et cetera.[11,22]

Thus pituitary disease could be classified as:

A. Hyperpituitarism of anterior lobe
   (1) Eosinophilic
   (2) Basophilic
B. Hypopituitarism of anterior lobe
   (1) Eosinophilic
   (2) Basophilic
C. Hyperpituitarism of posterior lobe
D. Hypopituitarism of posterior lobe

The diagnosis would depend upon an interpretation of all the facts gained from the history, physical examination and laboratory reports.

From the findings and simple classifications we have been able to formulate a simple outline, given below, which can be easily learned and used very effectively during the course of an initial history and physical examination. This outline has helped us considerably in ruling out or suspecting pituitary disease and many of the latter have been picked up which were previously missed.

H = history. PE = examination. L = laboratory.

1. Anterior lobe (Basophilic cells)
   A. Sexual disorders
      1. Male (H) Impotence or hypersexual tendency
         (PE) Genital development
      2. Female (H) Menstrual disturbances, marital relations, frigidity, sterility, etc.
         (PE) Genital development
   B. Growth disorders (Eosinophilic cells)
      1. Excessive obtained from (H and PE) x-rays of long bones—epiphysis
      2. Below normal obtained from (H and PE) x-rays of long bones—epiphysis
   C. Thyroid disorders
      (PE) Mentality (L) Basal metabolic rate, x-rays of long bones—osseous centers
   D. Adrenal disorders
      (PE) Blood pressure, hair distribution
2. Posterior lobe
   A. Fat metabolism (PE) Obesity and fat distribution
   B. Anti-diuretic effect (H) Water intake and output
   C. Carbohydrate metabolism (L) Blood sugar tolerance test
   D. Action on smooth muscle (PE) Blood pressure

(X-ray of skull in all suspected cases)
(Family history—heredity (1,21).

Thus in the course of a routine history we may note the following: (1) Menstrual and marital history, (2) growth history, (3) water intake and output, and (4) family history of endocrine tendency.

In the course of a physical examination we may note the following: (1) Mentality, (2) genital development, (3) growth and bony development, (4) hair distribution, (5) obesity and fat distribution, and (6) blood pressure. Also we may mention in passing that such features as shape of fingers, spacing of teeth, shape of the jaw, and pigmentations, are all suggestive and helpful.

Laboratory requirements are chiefly: (1) X-ray of skull, (2) x-ray of long bones in juvenile cases, (3) basal metabolic rate, (4) blood sugar tolerance test.

It is worth while mentioning that many cases of headaches which may be of a migrainous character may be the only symptom[13,19] and yet this may be due to a pituitary disturbance. If other minor hormonic symptomatology of pituitarism can be found, it is well to try to treat this condition from the standpoint of deficiency of the posterior lobe substance. Many such cases have been cleared up by pituitrin when other methods have failed. When the dominant sign is an epilepsy,[11,v.3] polyuria, or a glycosuria and hyperglycemia, the pituitary must also be kept in mind. The terminology, pituitary headaches, pituitary epilepsy, pituitary polyuria, and pituitary glycosuria is now well established. These are known to be due to a hypopituitarism of the posterior lobe, and substitution therapy has given satisfactory results.

The following is a report of twenty cases with essential symptoms, physical signs and

laboratory work necessary to arrive at a diagnosis of pituitary disturbance.*

Case 1.—I. E., male, aged fifty-two. Chief complaint, headache and vomiting. Nine years' duration.

Impotent eight years. Increase in size of hands and feet. Headaches frontal severe and constant. Has large "spade" hands and prominent jaw. Blood pressure is 110/74.

Basal metabolic rate, —18. Blood sugar tolerance increased. X-ray of skull: pituitary tumor. X-ray of long bones, marked enlargement of fingers and toes.

Diagnosis: Hyperpituitarism of anterior lobe E. (Acromegaly).

Note: Eosinophilic adenoma found at autopsy.

Case 2.—F. F., female, aged thirty-nine, chief complaint, headaches, epileptic attacks. Two years' duration.

Dysmenorrhea, irregular menses, and amenorrhea. Water intake and output marked. Headaches frontal. Hypertrichosis and male hair distribution. Fat distribution marked around thorax and abdomen.

Basal metabolic rate, —10. Blood sugar tolerance increased; x-ray of skull, pathological sella turcica, probable tumor.

Diagnosis: (1) Hyperpituitarism of anterior lobe B, (a) Probable basophilic adenoma; (2) Hypopituitarism of posterior lobe.

Case 3—A. J., male, aged forty-five. Chief complaint (1) progressive fatigue; (2) gastro-intestinal disturbances. Two years' duration.

Impotent five months. Continuous frontal and occiptal headaches. Atrophy of testicles. Female hair distribution, hair on head falling out, shaves less often. Fat distribution somewhat marked over hips. Blood pressure 100/80. Pigmentation on mucous membrane of mouth.

Basal metabolic rate, —20. Blood sugar tolerance increased. X-ray of skull: pituitary tumor.

Diagnosis: (1) Chromophobic adenoma (verified by pathologist after its removal); (2) hypopituitarism of posterior lobe.

Case 4.—H. Z., male, aged seventeen. Chief complaint, ulcers of legs.

Genitals underdeveloped. Hair distribution very sparse. Enormous fat distribution, girdle and hips. Blood pressure 120/80. Tapering fingers, widely spaced teeth.

Basal metabolic rate, +6. Blood sugar tolerance increased. X-ray of spine, spina bifida occulta.

Diagnosis: Hypopituitarism of anterior and posterior lobes. (Froehlich's syndrome)

Case 5.—M. K., female, aged forty. Chief complaint, (1) rapid increase in weight; (2) severe headaches.

Amenorrhea. Very little water intake. Headaches frontal.

Family history positive for obesity.

Mentality, emotional outbursts either crying or laughing. Hypertrichosis and male hair distribution. Fat distribution, mostly face, chest and abdomen, legs and thighs spared. Blood pressure 160/100.

Purple striæ on abdomen.

Basal metabolic rate, +25. Blood sugar tolerance decreased. X-ray of skull, haziness inside sella turcica.

Diagnosis: (1) Hyperpituitarism of anterior lobe B; (2) hypopituitarism of posterior lobe.

Case 6.—F. S., female, aged twenty-four. Chief complaint, obesity since childhood.

Family history positive for obesity.

Hypertrichosis and male hair distribution; fat distribution: neck, chest and abdomen; blood pressure 120/80. Tapering fingers.

Basal metabolic rate, —25. Blood sugar tolerance increased.

Diagnosis: (1) Hypopituitarism of posterior lobe; (2) hypothyroidism.

Case 7.—S. F., female, aged thirty-five. Chief complaint, (1) obesity; (2) headaches.

Amenorrhea. Frontal headaches.

Family history: (1) obesity prevalent; (2) mother diabetic.

Hypertrichosis of lower chin. Fat distribution; neck, shoulders, chest, abdomen, and thighs. Blood pressure 124/70. Tapering fingers; widely spaced teeth.

Basal metabolic rate, +10. Blood sugar tolerance decreased. X-ray of skull: probable pathological sella turcica.

Diagnosis: Hypopituitarism of anterior B and posterior lobes.

Case 8.—R. P., female, aged forty-four. Chief complaint, (1) obesity; (2) headaches.

Artificial menopause at 22 years of age. Shoes one size larger than several years ago. Headaches at vertex.

Family history positive for obesity.

Large hands and feet. Fat distribution general but marked around chest and girdle. Blood pressure 140/90. "Spade" hands and prognathism of lower jaw.

Basal metabolic rate, +22. Blood sugar tolerance normal. X-ray of skull: pathological sella turcica.

Diagnosis: Hyperpituitarism of anterior lobe E (Acromegaly).

Case 9.—J. M., male, aged fifty. Chief complaint, severe frontal headaches. Three years' duration.

Water intake increased last six months. Headaches frontal.

Family history: Two brothers with lipomatosis.

Fat distribution, lipomatosis. Blood pressure 110/80. Pigmentation in buccal mucous membrane.

Basal metabolic rate, —8. Blood sugar tolerance increased. X-ray of skull: Bridging of clinoids; erosion and deepening of fossa.

Diagnosis: Hypopituitarism of posterior lobe.

Case 10.—H. B., male, aged fourteen. Chief complaint, (1) underdeveloped; (2) underweight; (3) backward in school.

Short for age. Bedwetter. Frequent frontal headaches.

Mentality retarded. Genitals underdeveloped. Growth underdeveloped. No hair. Underweight. Blood pressure 90/60. Tapering fingers.

Basal metabolic rate, —11. Blood sugar tolerance normal. X-ray of skull normal. X-ray of long bones: somewhat delayed epiphyseal union.

Diagnosis: (1) Hypopituitarism of anterior lobe; (2) hypothyroidism.

Case 11.—L. W., male, aged sixteen. Chief complaint: (1) overweight, (2) small genitals.

Underdeveloped genitals. Undescended testicle. Hair distribution scanty around pubis. Fat distribution: chest and hips; well developed mammæ. Blood pressure 110/80. Tapering fingers.

Basal metabolic rate, —19. Blood sugar tolerance normal. X-ray of skull normal.

Diagnosis: (1) Hypopituitarism of anterior lobe B and posterior lobe (Froehlich); (2) hypothyroidism.

*Only positive findings given.
Diagnosis in parentheses are those commonly used.
E=Eosinophlic
B=Basophilic

Case 12.—R. S., male, aged twenty. Chief complaint, overweight.

Family history positive for obesity.

Mentality: backward in school, petty thief. Female hair distribution. Fat distribution: abdomen and hips, well developed mammæ. Blood pressure 120/80. Tapering fingers, high pitched voice, widely spaced teeth, dry skin.

Basal metabolic rate, —2. Blood sugar tolerance increased. X-ray of skull normal.

Diagnosis: (1) Hypopituitarism of posterior lobe; (2) hypothyroidism.

Case 13.—H. S., male, aged fifteen. Chief complaint, overweight.

Excessive intake and output of water, always thirsty.

Family history positive for obesity.

Genitals underdeveloped. No hair on body. Fat distribution: abdomen and hips. Blood pressure 98/80. Tapering fingers.

Basal metabolic rate, —6. Blood sugar tolerance normal. X-ray of skull normal.

Diagnosis: Hypopituitarism of anterior lobe B and posterior lobe (diabetes insipidus).

Case 14.—M. W., female, aged thirteen. Chief complaint (1) marked somnolence; (2) headaches; (3) overweight.

Not menstruating. Frontal headaches. Backward in school. Fat distribution: shoulders, abdomen and hips. Blood pressure 108/76. Tapering fingers, very drowsy, walks and talks very slowly.

Basal metabolic rate, —18. Blood sugar tolerance increased. X-ray of skull normal.

Diagnosis: (1) Hypopituitarism of posterior lobe; (2) hypothyroidism (pituitary hibernation).

Case 15.—G. R., female, aged forty-four. Chief complaint: (1) incontinence; (2) nervousness.

Menopause one year ago.

Paranoia. Fat distribution: general, but marked on abdomen and hips. Blood pressure 140/100. Dull expression on face, dry skin.

Basal metabolic rate, —17. Blood sugar tolerance decreased. X-ray of skull: large sella, erosion of posterior clinoids, and dorsum, floor irregular.

Diagnosis: (1) Hypopituitarism of posterior lobe (a) possible adenoma; (2) hypothyroidism.

Case 16.—J. K., male, aged thirteen. Chief complaint, no growth since seven years old.

Undeveloped genitals. No growth since seven.

Family history: grandmother diabetic.

Mentality retarded. Genitals underdeveloped. Appearance of a dwarf. No hair on body. Fat distribution: breasts and hips. Blood pressure 90/60. Lowered body temperature, dry skin, irregularity of teeth.

Basal metabolic rate, +6. Blood sugar tolerance decreased. X-ray of skull: sella turcica very small and shallow. X-ray of long bones: no union of epiphyses of metacarpals or phalanges, pisiform absent.

Diagnosis: (1) Hypopituitarism of anterior and posterior lobes, (2) hypothyroidism (dwarfism).

Case 17.—G. K., male, aged six. Chief complaint: (1) overweight; (2) convulsions.

Undeveloped genitals. Convulsions since one year old.

Fat distribution: breasts and hips. Undeveloped genitals.

Basal metabolic rate, —4. Blood sugar tolerance normal. X-ray of skull normal.

Diagnosis: Hypopituitarism of anterior lobe B, associated with epilepsy.

Case 18.—A. M., male, aged eighteen. Chief complaint: retarded growth.

Retarded growth. Migraine headaches since patient was hit on head with brick four years ago.

Female hair distribution on pubis, scanty on rest of body. Blood pressure 122/80. "Spade" hands, small head.

Basal metabolic rate, +5. Blood sugar tolerance increased. X-ray of skull normal. X-ray of long bones: delayed union of epiphyses of metacarpals, radius, ulna, tibia and fibula.

Diagnosis: Hypopituitarism of anterior lobe E.

Case 19.—A. T., female, aged thirty-five. Chief complaint: (1) nervousness; (2) palpitation of the heart; (3) return of toxic thyroid symptoms eight months following thyroidectomy.

Severe and frequent parietal and occipital headaches.

Family history: brother died of Addison's disease.

Hypertrichosis upper lip, chin and legs. Fat distribution: abdomen and hips. Blood pressure 150/90. "Spade" hands, prognathism of lower jaw, fine tremor of fingers.

Basal metabolic rate, +22. Blood sugar tolerance normal. X-ray of skull: abnormal sella turcica.

Diagnosis: (1) Hyperpituitarism anterior lobe E (beginning acromegaly); (2) recurrent hyperthyroidism.

Case 20.—S. G., male, aged forty. Chief complaint: (1) nervousness; (2) weakness; (3) itching of skin.

Beginning impotence. Slight frontal headaches.

Family history: one brother is very tall.

Blood pressure 130/80. "Spade" hands, prognathism of lower jaw.

Basal metabolic rate, —10. Blood sugar tolerance increased. X-ray of skull: pathological sella turcica.

Diagnosis: (1) Hyperpituitarism of anterior lobe; (2) hypopituitarism of posterior lobe.

In our study there were twelve males and eight females ranging in age from six to fifty-two. Most were found in adolescence and in the fourth decade of life.

Eight of our twenty cases gave chief complaints which were in no way referable to endocrine pathology. However, noting certain findings in the history and physical examination, as set down in our outline, definite pituitary involvement was discovered.

Headache was a chief complaint in seven cases and was elicited as a symptom in five more. This symptom is so prevalent that it should be seriously considered in the possibility of pituitary disturbances.

Increasing weight and obesity were chief complaints in nine cases and elicited as symptoms in seven more.

Epileptic attacks were complained of in one case, and elicited as a symptom in another. This is sufficient evidence to make one aware of the possibility of pituitary disturbance when such a symptom presents itself.

It is interesting to note that of the eight female patients, not one gave a chief complaint of sexual or menstrual disturbance, yet upon questioning six of the eight gave histories of such a disturbance.

Of the twelve males, one gave a complaint of small genitals, but on questioning two others gave a history of undeveloped genitals and three others of impotence.

Nine of our twenty cases gave a positive family history. According to Englebach, heredity is a major factor in endocrine disturbance, but a positive family history was not found as frequently as we expected. Unreliability in the answers of our clinic group could account for this low figure.

Mental disturbances were not given in any of the cases as a chief complaint, but mental retardation was found in four, and paranoia in one. Mental retardation is usually due to an associated hypothyroidism, and three of these cases showed a low basal metabolic rate.

A positive x-ray finding of the skull was found in eleven of our twenty cases. Four showed positive x-ray findings of disturbance in long bone development.

In one of our cases, an eosinophilic adenoma was proved by autopsy, and another, a chromophobic adenoma, was found by pathologic examination after operation. The other diagnoses were based entirely upon an interpretation of clinical findings, laboratory reports and therapeutic results. They were made in terms of "hypo" and "hyper" activity of the anterior or posterior lobe, the old terminology being put in parenthesis in several instances.

Individually several of the cases present findings worth while mentioning.

Case 1.—This is an example of acromegaly with low basal metabolic rate and low blood pressure. The diagnosis was verified at autopsy, and although the basal metabolic rate and blood pressure are ordinarily elevated in such cases, the findings in this case can be explained on the basis of hyperactivity which had exhausted itself, after the bone changes had been made.

Case 2.—The laboratory findings were indicative of a hypopituitarism, but clinically, amenorrhea, fat distribution, hypertrichosis and purple striæ are typical of Cushing's syndrome—basophilism.

Case 3.—A case of progressive fatigue, gastrointestinal disturbances, pigmentation in mucous membranes of cheeks, low basal metabolic rate, low blood pressure, was very indicative of Addison's disease and was so diagnosed by previous observers. An x-ray of the skull showed a large tumor which was diagnosed as chromophobic adenoma, because this is the only type of adenoma associated with hypopituitarism. This diagnosis was verified after operation, by the pathologist.

Case 4.—In addition to being a typical Froehlich syndrome, patient came with a chief complaint of ulcers of the leg which were trophic in character and were found associated with a spina bifida occulta (diagnosed by x-ray). This is another example of bony maldevelopment associated with endocrine disturbance.

Case 5.—Clinical and laboratory findings of hypertention, amenorrhea, striæ, typical fat distribution, decreased basal metabolic rate and decreased sugar tolerance were very suggestive of basophilism, yet patient lost weight and obtained relief from headaches by surgical pituitrin and thyroid.

Case 6.—Diagnosis of hypo-thyro-pituitarism verified therapeutically by a loss of 54 pounds in nine months by giving thyroid and increasing daily doses of surgical pituitrin.

Case 8.—Castration at twenty-two, developed acromegaly in later life. This sequel of castration has been occasionally reported in the literature.

Case 9.—Diagnosed as hypopituitarism of the posterior lobe. These symptoms followed an influenza thirteen years previously. A spinal fluid sugar was elevated. We believe that the hypopituitarism may have been influenced by a post-encephalitic process.

Case 11.—This patient had a definite development of genitals and descent and enlargement of the right testicle by the administration of antuitrin S.

Case 14.—This was a case of hypo-thyro-pituitarism with lethargy and mental retardation, called by Engelbach "pituitary hibernation." Thyroid, anterior and posterior pituitary extract caused marked improvement.

Case 18.—This is an excellent example of the antagonism existing between the pituitary and the islands of Langerhan's. This patient had definitely a hypopituitarism of the anterior lobe (eosinophilic) and the following blood sugar tolerance: Fasting, 57.1; one hour, 76; two hours, 62; three hours, 55.

Case 19.—This case is one of recurrent hyperthyroidism with clinical features of hyperpituitarism of the anterior lobe, *i.e.*, Acromegaly. The question arises as to whether or not the pituitary in this case influenced the persistence of the hyperthyroidism after the operation.

Summary

We have given an analysis of twenty cases of various types of pituitary disturbance, presenting interesting findings and problems. Our diagnoses were arrived at first, by means of a simple classification of pituitary disease, secondly, by a study of the facts and a review of the literature written in the past twenty years. By these means we were able to compose a simple outline of symptoms, signs and laboratory findings which would enable us to suspect pituitary disturbance during an initial history and physical examination. We have also stressed the importance of being a little more endocrine conscious, and have mentioned the

symptoms and signs which should enable one to suspect such a disturbance more easily.

12907 East Jefferson Avenue

Bibliography

1. Aron, Max, Vanlaubert, C., and Stahl, J.: The functional troubles of the anterior lobe of the hypophysis (prehypophysis) and certain endocrine disturbances in which they play a rôle. Presse med., 40:1931, (Dec. 31) 1932.
2. Atwell, W. J.: On the finer structure of the pars tuberalis of the hypophysis. Endokrinologie, 5:1-9, (October) 1929.
3. Barker: Endocrinology and Metabolism.
4. Baudouin, A., Lhermitte, J., and Lereboullet, J.: A case of pineal tumor: Absence of precocious macrogenitosomia. The problem of hypophyseal cachexia. Rev. Neurol., 1:388-403, (March) 1932.
5. Bery, N. E.: Hypopituitarism with special reference to its sexual manifestations. Canadian Med. Assoc. Jour., 22:354, (March), 1930.
6. Calder, Royald M.: Pituitary cachexia (Simmond's disease) treated with anterior pituitary extract. Jour. Am. Med. Assn., 98:314-315, (Jan. 23) 1932.
7. Camus, J., and Roussy, G.: Anatomy and pathologic physiology of the pituitary. Rev. Neurol., 17:622, 1922.
8. Claude, H., and Lhermitte, J.: The infundibular syndrome in a case of tumor of the third ventricle. (le Syndrome infundibulaire dans un cas de tumor du troisieme ventricule.) Presse méd., 25:417, 1917.
9. Cushing: Dyspituitarism Twenty Years Later.
10. Cushing: Pituitary Body-hypothalamus and Parasympathetic Nervous System.
11. Englebach: Endocrinology. Vols. I, II and III.
12. Hilgartner, and Lankford: Pituitary insufficiency. Texas State Jour. Med., 22:258-259, 1926.
13. Hodges, J. A.: Migrainous and pituitary headache contrasted. Vir. Med. Month., 48:203-204, 1921.
14. Kux, E.: Malignant pinealoma and a malignant fetal adenoma of hypophysis. Beitr. z. path. Anat., 87:59, 1931.
15. Leschke, E.: Contributions to the clinical pathology of the interbrain. Deutsch. Jour. klin. Med., 87:201, 1929.
16. MacDowell, E. C.: An hereditary anterior pituitary deficiency in mouse. Anat. Record, 46:249-257, 1930.
17. Maronon, G.: Pituitary obesity. Deutsch. Arch. f. klin. Med., Leipzig, 151:129, 1926.
18. Maronon, G., and Pintos, G.: Purely traumatic lesions of the pituitary, adipose genital syndrome and diabetes insipidus. Nouvelle Iconog. de la Salpetriere, 28:185-195, 1916.
19. Mayers, L. H.; Pituitary headache. Endocrinology, 14:319-327, 1930.
20. Merland, A.: Pathologic examination of the thyroid and hypophysis in a case of atypical myxedema. Compt. rend. Soc. de biol., 88:1099-1101, 1923.
21. Osler: Modern Medicine. 3rd edition.
22. Parker, R. Herman: Diseases of the pituitary body. Clinical manifestations and treatment of hypopituitarism. Southern Med. Jour., 93:115, 1931.
23. Stawell, R.: Disorders of the pituitary body and parapituitary region. Med. Jour. Australia, 2:462-464, 1930.
24. Winter, E. W.: Tumor of the hypophysis during pregnancy. Arch. f. Gynäk., 144:449-451, 1930-1931.

IMMUNE GLOBULIN USED AS A PREVENTIVE AND MODIFIER OF MEASLES

G. M. LANING, M.D., and T. N. HORAN, M.D.†
DETROIT, MICHIGAN

The Detroit Department of Health has kindly made available certain epidemiologic data regarding the measles of 1927-1928 and of 1934-1935,which is included here, prior to a discussion of a special series of cases. In 1927-1928 there were reported, in Detroit, 15,000 cases of measles, with 163 deaths; there are reasons to believe many cases were unreported. In 1934-1935, a total of 27,258 cases were reported, with fifty-eight deaths. This recent epidemic extended from October 13 to May 30, with a peak-incidence from April 6 to 18. The wide distribution by the Department of Health of both convalescent serum and immune globulin for the treatment of cases unable to pay, undoubtedly increased the total number of cases reported. In virulence the two epidemics were equal. Although mindful of a lower percentage of cases reported in 1928, a recorded mortality rate five times greater than in 1935, is proof to the Department of Health of usefulness of convalescent serum and immune globulin in the treatment of measles. There were no deaths reported among those children who were given immune globulin.

In October and November, 1934, at the onset of the measles epidemic three specific methods of treatment were considered: *Convalescent serum* had been used during the epidemic of 1928, and in the succeeding years, and was known to be of value in the prevention and control of measles. Early in the epidemic of 1934-35 the demand for convalescent serum far exceeded the supply, new serum placed on distribution was used within a few hours and the Department of Health laboratories were unable to produce sufficient quantities. *Whole adult blood* could be given intragluteally, but the degree of protection against measles is variable, and the Wassermann reaction often unknown. *Immune globulin,* a new extract, prepared from the placenta, had been discovered by Charles F. McKann and Fu Tang Chú. It was rich in immune bodies, was available in sufficient quantities, and seemed worthy of a trial.

This report includes a total of 139 cases; ninety-three were given immune globulin; forty-six received no specific treatment. As suggested in the original report immune globulin could be given shortly after exposure

†Dr. G. M. Laning is a member of Harper Hospital Staff, Detroit; Dr. T. N. Horan is a member of the Out-Patient Department, Harper Hospital.

	Number	Average Age	Light	Moderate	Severe	Complications	Deaths
Immune globulin given to prevent	19*	3.5 yrs.	7	0	0	0	0
Immune globulin given to modify	74	5.4 yrs.	68	6	0	0	0
No specific treatment	46	7.3 yrs.	9	11	26	15	2

*Twelve cases did not develop measles.

to *prevent* measles and from seven to ten days after exposure to *modify* measles.

I. Immune Globulin Used as a Preventive of Measles

In nineteen cases immune globulin was used to prevent measles. These included children who had recently been ill from infections of the respiratory tract, ear, lymph glands, or to whom, for economic reasons, it was important there should be no sickness in the family at the time. Doses of 2 c.c. (seven cases) and 10 c.c. (twelve cases) were given one to four days after a known exposure. Twelve of these cases did not develop measles; in the remaining seven the course of the illness was light, with eruption, a degree of fever, and a transient conjunctivitis and nasopharyngitis. There were no complications.

II. Immune Globulin Used as a Modifier of Measles

Immune globulin for modifying measles was given in 2 c.c. doses in seventy-four cases. Since a light case of measles will confer a permanent immunity on the child, this procedure is the method of choice. In epidemic times, when contacts are almost continuous, the date of exposure is often difficult to set. It was frequently necessary to give the immune globulin upon the appearance of prodromal symptoms, or in the presence of Koplik's spots. Late in the epidemic it became increasingly difficult to determine the optimum time for the administration of the modifying dose. Atypical cases were common. Often the Koplik's spots did not appear until the rash had been completely out on the body for a day or two; in other instances the bronchial symptoms preceeded the corrhiza, Koplik's spots and morbiliform rash by several days. Some cases could receive no modifier since the disease was well established before diagnosis was possible. In sixty-eight cases the course of measles was light; in six cases moderate, with an intermittent fever of 102° F. to 103° F. for three days preceding and a continuous fever for three to four days after appearance of the eruption. *There were no severe cases and no complications among those who were given immune globulin.*

Forty-six patients to whom no immune globulin was given form a series for comparison. These include children over ten years of age in good health, and others with a known allergic tendency, because of uncertainty as to the sensitizing properties of the extract. In nine the course of the measles was light, and in eleven moderate. There were twenty-six *severe* cases, often beginning with a chill, a fever of 104° F. to 105° F., a profuse eruption, severe conjunctivitis and swelling of the nasal mucous membrane, persistent cough difficult to control, and sometimes toxic vomiting, headache, and pain in the abdomen. Fifteen of these cases developed serious complications. There were two deaths. Among the complications were broncho-pneumonia (six cases), enlarged lymph glands (four cases), acute otitis media (three cases) one progressing to bilateral acute mastoid disease, requiring surgery. One of the deaths was due to encephalitis; the other to bronchopneumonia, pleurisy with effusions, purulent pericarditis, and terminal septico-pyemia.

Reactions to Immune Globulin

A total of ninety-three cases were given immune globulin, with eighteen reactions, eight of these following the full 10 c.c. preventive dose. There were local reactions with redness, swelling and tenderness, and systemic reactions with fever (102° F.—105° F.), malaise, and general lymph gland enlargement. These symptoms usually subsided within twenty-four hours, occasionally persisting for two to three days. Reactions were less during the latter part of the epidemic, possibly due to an improvement in the preparation of immune globulin. None of the reactions was allergic in character.

Conclusions

1. Immune globulin was given in ninety-three cases as a preventive and modifier of measles. There were no serious cases and

no complications in this group of children.

2. In forty-six patients receiving no specific treatment, twenty-six developed a severe form of measles, fifteen with complications. There were two deaths.

3. Reactions were encountered, but not alarming and without ill effect.

4. Immune globulin is comparable in effectiveness to convalescent serum; it is an available, safe, and useful preparation in the preventing and modifying of measles.

Reference

1. McKann, Charles F., and Fu Tang Chú: Amer. Jour. Dis. Child., (Mar.) 1933.

OSGOOD-SCHLATTER'S DISEASE

Principles of Treatment with a Review of Three Cases

ROBERT D. FAIRCHILD, M.D.†

Resident in Orthopedic Surgery, Receiving Hospital
DETROIT, MICHIGAN

Osgood-Schlatter's disease is an epiphysitis of the anterior tibial tubercle. It is a rare disease and from time to time, cases of it are noted among adolescents in a large orthopedic service. A review of the essential features of the condition with a reiteration and modification of the principles of treatment previously advocated[1] is necessary to bring it to the attention of practitioners for the benefit of an occasional patient with the malady.

The lesion is probably of traumatic origin,[2] occurs most frequently in males and most often on the left side. It is a disease of early adolescence. Our patients were eleven, twelve, and thirteen years of age, those of Hunter[1] were fifteen, fourteen, and fourteen, while those of Pomeranz and of Wilson, Fishel, and Lagasa[3] were adolescents.

Diagnosis depends on the history of pain and swelling localized to the anterior tibial tubercle in an adolescent and on the x-ray findings. The latter show anything from avulsion of periosteum of the anterior tibial tubercle to complete avulsion of the tubercle with fragmentation.[2]

Osgood-Schlatter's disease is to be differentiated by clinical and x-ray examination from sarcoma, tuberculous arthritis, syphilis and osteomyelitis. The pain associated with sarcoma is not present and repeated x-ray examination will help to eliminate malignancy as a possibility in diagnosis. Tuberculosis arthritis shows a fusiform swelling of the knee joint and pain on motion not present in Osgood-Schlatter's disease. Serodiagnostic procedures will ususally detect syphilitic infection in the young. There is little or no fever associated with Osgood-Schlatter's and no condensing osteitis is seen in the x-ray film. Furthermore, there are none of the acute symptoms of bone infection usually associated with osteomyelitis in the young.

†Dr. Fairchild is a graduate of Rush Medical College of the University of Chicago in the class of 1933 (March). He served his internship at Receiving Hospital, Detroit, Michigan, July, 1933, to July, 1934. He was Assistant Resident in Orthopedic Surgery, Receiving Hospital, July, 1934, to May, 1935, and Resident in Orthopedic Surgery, Receiving Hospital, May, 1935, to October, 1935. Dr. Fairchild is now residing in Rochester, Minn.

The treatment which seems most effective is immobilization in plaster.[1] The knee and patellar ligament are thereby put at rest and healing of the epiphysitis occurs. Two to three months in plaster is recommended by Hunter. One of our cases was well after five weeks in plaster. The others in our series of three were treated by tight flannel bandages about the knee and their recovery was slower. I believe that plaster immobilization in these cases would have resulted in a more prompt cure.

Three cases with their end-results are reported, among them one case of bilateral Osgood-Schlatter's disease.

Case Reports

Case 1.—R. B. (J51735), a white male, aged thirteen, entered the Out-Patient Department with a tender anterior tibial tubercle in December, 1934. Radiographic examination of the left knee showed fragmentation of the epiphysis of the anterior tubercle of the tibia. The physician seeing him recommended bandaging of the knee. This therapy was carried out for a period of three weeks according to the mother's story when the patient returned at my request for re-examination in September, 1935. The patient has had no symptoms for several months, the mother stating that there had been none after a period of eight weeks following diagnosis. Radiographic examination showed union of the tibial tuberosity. This patient was apparently sufficiently immobilized by the flannel to get well.

Case 2.—J. G. (J50033), a white male, aged eleven, entered the Out-Patient Department in December, 1934, with a history of pain and swelling over the anterior tibial tubercles of both legs of twelve months' duration. Radiographic examination showed fragmentation of the anterior tubercles of both tibiæ

which was considered to be due to Osgood-Schlatter's disease. Bandaging was advised and carried out by the mother at home for most of the winter. At my request, he returned in September, 1935, and his mother stated that he had continued to have disability up to the beginning of the summer. No tenderness of the anterior tibial tubercles was present at this examination. Radiographic examination showed old fragmentation of the tibial tuberosities with union of the fragments. In my opinion, this patient would have benefited from immobilization for six weeks in plaster and would have thereby been saved months of disability.

Case 3.—R. G. (J38621), a colored male, aged twelve, entered the Out-Patient Department in September, 1934, because of a painful left anterior tibial tuberosity with swelling of four to five months' duration. Radiographic examination of the left knee showed fragmentation of the epiphysis of the anterior tubercle of the tibia. A cast was applied from the mid-thigh to the ankle with the knee joint in full extension and the extremity immobilized in this manner for five weeks. He was discharged from the Out-Patient Department as cured on November 1, 1934. At my request, he returned in September, 1935, for re-examination. There had been no symptoms since two weeks following the removal of the plaster and an x-ray of the left knee was ordered. The patient, however, failed to return for x-ray examination. I considered that the treatment in this case was adequate and resulted in a prompt cure.

Conclusions

1. Osgood-Schlatter's disease is an epiphysitis of the anterior tibial tubercle occurring in adolescents as the result of trauma and the condition is easily differentiated from sarcoma, tuberculous arthritis, syphilis, and osteomyelitis.
2. Adequate treatment consists in immobilization in plaster for from five to six weeks.
3. Three cases of Osgood-Schlatter's disease are reported, one being bilateral.

Acknowledgment.—Radiographs of these cases were made at Receiving Hospital and interpreted by Dr. J. C. Kenning, Roentgenologist of Receiving Hospital.

Bibliography

1. Hunter, G. V. H.: Osgood-Schlatter's disease. Am. Jour. Surg., 8:833, 1930.
2. Pomeranz, M. M.: Osgood-Schlatter's disease: Lesions of the tibial tubercle. Am. Jour. Surg., 39:17, 1925.
3. Wilson, A. N., Fishel, C. R., and Lagasa, J. A.: Osgood-Schlatter's disease. Report of two cases (one bilateral). Northwest Med., 28:134, 1929.

ACTIVE IMMUNIZATION OF CHILDREN AGAINST ACUTE ANTERIOR POLIOMYELITIS WITH KOLMER'S VACCINE*

H. ROEHM, M.D.†
BIRMINGHAM, MICHIGAN

Active immunization of children against acute anterior poliomyelitis with the vaccine prepared by Dr. John A. Kolmer of Philadelphia seems to be a safe and satisfactory procedure. At the time of writing, over eleven thousand individuals have been vaccinated. Of these none has developed the disease in the epidemic areas or elsewhere, that I am aware of, with the exception of five individuals who were intimately exposed to poliomyelitis and were vaccinated during the incubation period.

The vaccine is now prepared by incorporating a five per cent suspension of infected monkey spinal cord in 1 per cent sodium ricinoleate and one to eighty thousandth phenyl mercuric nitrate. The vaccine I have used consisted of a 4 per cent cord suspension in 1 per cent sodium ricinoleate.‡

The brain and cord of each monkey used to prepare the vaccine is injected intracerebrally into mice for the virus of lymphocytic chorio meningitis (Armstrong and Lillie) before the latter is used in the preparation of vaccine. So far this virus has never been encountered but the tests safely prevent the possibility of its access to the vaccine and removes all danger of its occurrence.

More than 33,000 doses of the vaccine have now been given to over 11,000 individuals with no ill effects other than occasional local reactions. Under these circumstances the complete safety of the vaccine appears to have been demonstrated.

The safety is due to several factors. The small first dose, the subcutaneous method of administration, the rapidity of anti-body production and the strong probability that the remote monkey passage virus has lost effectivity for human beings. The slight attenuation by sodium ricinoleate is an additional factor but this is relatively unimportant.

Anti-viral antibody has been promptly

*Presented at the 1935 meeting of the Michigan State Medical Society.

†Dr. Roehm is a graduate of the University of Michigan, B.S., 1921; M.S., 1922; M.D., 1923. He is Attending Pediatrist, St. Joseph's Mercy Hospital, Pontiac, Michigan.

‡This vaccine was prepared by the Wm. S. Merrell Company of Cincinnati, Ohio, under the direction of Dr. E. G. Gerwe, who also performed the serum neutralization tests.

produced in 90 per cent of the individuals in an amount which Dr. Kolmer believes affords protection.

Children vaccinated over a year ago still carry the antibody, and monkeys immunized three years ago last March are still solidly immune to intracerebral injections of ten minimal infective doses of the virus. It is to be hoped therefore that the immunity will endure several years at least, to carry children over their age of greatest susceptibility until the natural immunity of adult age is reached.

There is no evidence to indicate that vaccination will reduce in any way the acquisition of natural immunization by subclinical or unrecognized infection with the virus.

During the past year it has been found by Dr. Kolmer that the vaccine will sometimes abort the disease in monkeys when given as late as four days after the intracerebral injections of a dose of virus producing paralysis in the controls in about eight days after inoculation.

It is to be emphasized that when the vaccine is given during the incubation period it may fail to abort the disease. Under the circumstances the attack should not be blamed on the vaccine. Professor Kessel of Los Angeles has reported one such case where the disease developed in an adult four days after the first injection of 0.5 c.c. of the vaccine and there have been four other cases as stated above.

There is no evidence of a negative phase of increased susceptibility in either monkeys or humans following the administration of the vaccine. It appears therefore that it can be safely given during an epidemic and when direct exposure has occurred.

Through the courtesy of Dr. Kolmer I have vaccinated 206 children in Oakland County. Of these children 122 were males and eighty-four, females. The average age was slightly under eight years. The youngest was eighteen months old, the oldest seventeen years. Of these children twenty-six were definitely allergic to various proteins, animal or vegetable, or pollens. None of these had an allergic reaction to the vaccine. There were no systemic reactions in any child. The local reactions were confined to a slight swelling and some stiffness of the arm for a few hours.

Blood was taken from twenty-one children, about 10 per cent of the group, before vaccination. Only one of these was found to contain antibody in sufficient amount to prevent paralysis in a monkey when injected intracerebrally with a mixture of 0.5 c.c. serum and 0.5 c.c. of a 10 per cent cord suspension of the virus.

Blood has been taken from this same group eight weeks after vaccination but these serum neutralization tests are not yet completed. Accordingly, the percentage of immune children in this control group is not yet known.

Unusual phenomena occurred in two of the vaccinated group.

Case 1.—Nancy L., aged nine years, an allergic child who suffers from hay fever and asthma, had an asthmatic attack forty-eight hours after her first injection of 0.5 c.c. of vaccine. Three days later she developed a small area of pneumonia at the base of the right lung. Following her convalescence she was given the second and third injections with no manifestation of allergic reaction.

Case 2.—Alfred A., aged ten years, was exposed to poliomyelitis by his tent mate at a summer camp. The day after the tent mate developed symptoms of the disease Alfred was brought to me complaining of headache and stiffness of the neck. His temperature was 103° F. He had a severe pharyngitis. Because of his exposure he was given the first injection of the vaccine and put to bed. His further treatment consisted of salicylates, ice collar to the cervical glands, and copious saline irrigations of the throat. Forty-eight hours later he was well. He was given his second and third injections one week apart. The day following his last injection he again complained of headache and had a fever. I did not see him as I was out of town. He was taken to a Detroit hospital, where a lumbar puncture was done. He was diagnosed as a case of poliomyelitis and put in a room with another poliomyelitis patient. In twenty-four hours he felt well, developed no paralysis, remained in the hospital three weeks and is now at home, well. He had no paralysis at any time.

In neither of these cases do I believe the phenomenon can be attributed to the effect of the vaccine. The two injections given in Case 1 after pneumonia provoked no allergic response. The patient in Case 2 was intimately exposed at camp to poliomyelitis, was again exposed at the hospital, but developed no paralysis.

Comment

Two hundred and six children have been vaccinated with no local or general reactions of any consequence. The reactions in the two cases presented cannot be laid to the vaccine as far as I am able to judge. I regret that I am unable to give the percentage of the control group that have developed

immunity after vaccination according to the monkey serum neutralization test, at the present time.

I do not believe the vaccine is ready at the present time for general distribution for the following reasons: It must be kept on ice at all times. Bacteriologic sterility must be employed in handling the vaccine, as the vaccine I have used contained no preservative. The serum neutralization test employed on monkeys is scarcely practicable for a large group, and we have no other test at present to determine susceptibility or immunity. It will be some time before the duration of the immunity obtained from the vaccine can be determined.

DINITROPHENOL CATARACT

A Case History

WALTER Z. RUNDLES, M.D.†

FLINT, MICHIGAN

I wish to report a case of cataract which I believe is due to dinitrophenol administration for reducing purposes. The effects of this drug were first reported in the July, 1935, *Journal of the American Medical Association* by Drs. W. W. Boardman, Warren D. Horner and Richard Barr Jones.

Mrs. D., aged forty-eight, white. Her chief complaint was failing vision in the right eye in January of this year. In May of this year, she went to an optometrist for an eye refraction. Glasses were prescribed, but there was no improvement in vision. This summer she complained of practically blindness in the right eye. The left eye began to fail about five weeks ago. At the present time she cannot see anything with the right eye except light and dark. The left eye can discern objects. The right eye is painful to slight pressure.

In March, 1934, she started to take dinitrophenol, three capsules daily, for about twelve weeks. She lost about two pounds a week, reducing from 180 pounds to 158 pounds. Then, because of a skin eruption, which she termed hives, and because the skin became yellow, and the whites of her eyes began to turn yellow, the drug was discontinued. In June of this year, she took about fifty capsules, three capsules per day. She had an appendectomy and partial hysterectomy two years ago. She had x-ray treatment following the operation. Tonsillectomy was performed fifteen years ago.

There is no cataract history among her ancestors. No hereditary disease history is obtainable. Her mother is 84 years of age and in good health. Her father died due to accident at the age of fifty.

The physical examination revealed a woman, forty-eight years of age, weighing 184 pounds. She is apparently in good health and intelligent. Her ears, teeth and throat show no evidence of disease. The eye examination reveals vision in the right eye, ability to count fingers only. Vision in the left eye, 20/30 corrected with .50 sphere. Intra-ocular pressure, right eye, Schioetz 30, left eye, Schioetz 23. The slit lamp examination of the right eye shows the cornea clear, aqueous clear, anterior and posterior chambers shallow, the iris and pupillary area clear. The anterior capsule of the lens is cloudy, striated with minute bubble appearing areas, dry and roughened. The posterior capsule very opaque, the lens has a pearly gray color and is markedly swollen. The lens certainly looks different from any lens examined before.

The examination of the left eye reveals essentially the same condition, except that it is not so far advanced. The slit lamp examination five weeks later showed practically the same as before. At this time the left eye has become much worse.

I do not expect to perform a cataract extraction on either eye for several weeks, at least not until the intra-ocular pressure has subsided to nearly normal limits. It is interesting to note that this woman's husband took this drug at the same time and in the same amount in March, 1934. However, this summer he did not take any more, while she did. His vision is practically normal with his correction, but I can see changes in his lens with the slit lamp that do not encourage me very much. The lens is somewhat swollen, a bit cloudy and somewhat striated. Whether this will develop further is a question.

There is no doubt that dinitrophenol is the cause of cataract formation, and I feel sure that we will see a great many cataracts in the future, due to such reducing drugs. It is surely not safe to prescribe this drug until more complete experimental data are obtainable.

†Dr. Rundles graduated from the Detroit College of Medicine in 1924 after which he was assistant instructor in anatomy at the Detroit College of Medicine. He was resident in eye, ear, nose and throat at Receiving Hospital. He has pursued post-graduate courses at Harvard University and Vienna.

CANCER SURVEY OF MICHIGAN*

Made by

FRANK LESLIE RECTOR, M.D.†

Cancer Statistics‡

Throughout the civilized world the cancer death rate is increasing. In the United States in 1900, cancer ranked sixth as a cause of death with a rate of 63 per 100,000, and by 1927 cancer had reached second place and still occupies that unenviable position with a rate of 102.2 per 100,000 in 1933, an increase of 62 per cent in the death rate in 33 years. The following table from the Federal Bureau of the Census shows the mortality in the United States for 1933 due to the six leading causes of death:

TABLE VIII. PRINCIPAL CAUSES OF DEATH IN THE UNITED STATES
1933

Disease	Number Deaths	Death Rate
Heart disease	286,356	227.8
CANCER	128,475	102.2
Cerebral hemorrhage	105,554	84.0
Nephritis	104,263	82.9
Pneumonia	86,947	62.9
Tuberculosis	74,836	59.5

As the general death rate throughout the country is declining, due mainly to decreased infant mortality and deaths from communicable disease, and as the number of deaths from cancer is increasing throughout the United States, cancer is now responsible for practically 10 per cent of all deaths in the United States, an increase of approximately 40 per cent over the figures for 1920.

Heart disease and cancer are two diseases showing marked increase in death and death rates throughout the United States. While some other diseases, notably diabetes, are also showing a rapid increase in death rate, the total deaths from these diseases is but a fraction of those from cancer. There is a slight increase in the death rate from nephritis and a marked decrease in the rates for pneumonia and tuberculosis.

Table X shows death rates for the six principal causes of death in the United States for the period 1924-1933, inclusive.

TABLE IX. CANCER DEATHS IN REGISTRATION AREA AND PERCENTAGE OF ALL DEATHS REPRESENTED BY CANCER
1920-1933

Year	Number of Cancer Deaths	Percentage of All Deaths
1920	71,756	6.4
1921	75,113	7.4
1922	78,355	7.5
1923	81,505	7.3
1924	85,241	7.9
1925	88,623	8.0
1926	92,500	7.9
1927	95,103	8.6
1928	99,000	8.3
1929	111,562	8.0
1930	115,265	8.6
1931	117,790	8.9
1932	122,339	9.4
1933	128,475	9.9

TABLE X. DEATH RATES FOR CANCER AND OTHER LEADING CAUSES OF DEATH PER 100,000 POPULATION
United States Registration Area 1924-1933

Disease	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933
Heart disease	178.1	185.5	199.1	195.7	208.3	210.9	213.5	213.0	224.0	227.8
Cancer	91.9	92.6	94.9	95.6	96.1	95.9	97.2	99.1	102.2	102.2
Nephritis	89.6	96.4	98.3	92.4	95.3	91.2	90.8	87.3	87.3	82.9
Cerebral hemorrhage	92.7	84.4	86.3	84.0	87.2	86.1	84.9	86.7	87.5	84.0
Pneumonia	98.2	93.5	102.5	80.6	98.2	91.7	83.2	81.3	77.0	69.2
Tuberculosis	90.4	86.6	87.1	80.8	79.4	76.0	71.5	68.4	63.0	59.5

*Continued from November, 1935, issue.

†Field Representative, American Society for the Control of Cancer, New York, N. Y., Clarence Cook Little, Sc.D., Managing Director.

‡The term "cancer" as used in this report includes all forms of malignancy.

TABLE XI. TOTAL DEATHS, CANCER DEATHS, DEATH RATES AND PERCENTAGE OF ALL DEATHS REPRESENTED BY CANCER
Michigan—1914-1933

Year	Total Number Deaths	Cancer Deaths	Per Cent Cancer Deaths	Cancer Death Rate	
				Michigan	U. S. Registration Area
1914	39,906	2,414	6.0	76.6	79.6
1915	40,441	2,567	6.3	79.2	81.4
1916	46,038	2,702	5.9	81.3	82.1
1917	47,236	2,765	5.9	81.1	82.0
1918	54,617	2,896	5.3	82.8	80.3
1919	45,636	2,970	6.5	82.9	80.5
1920	51,982	3,109	6.0	84.8	83.4
1921	44,186	3,304	7.5	87.3	86.0
1922	43,817	3,423	7.8	87.8	86.8
1923	49,333	3,470	7.0	86.5	89.4
1924	47,304	3,744	7.9	90.7	91.9
1925	49,417	3,768	7.6	88.8	92.6
1926	54,080	3,981	7.4	91.3	94.9
1927	50,600	4,156	8.2	92.9	95.6
1928	54,755	4,249	7.7	92.6	96.1
1929	56,117	4,446	7.9	94.6	96.0
1930	51,561	4,420	8.6	91.3	97.2
1931	49,068	4,610	9.4	93.5	99.1
1932	49,569	4,771	9.6	92.9	102.2
1933	48,507	4,890	10.0	97.0	102.2

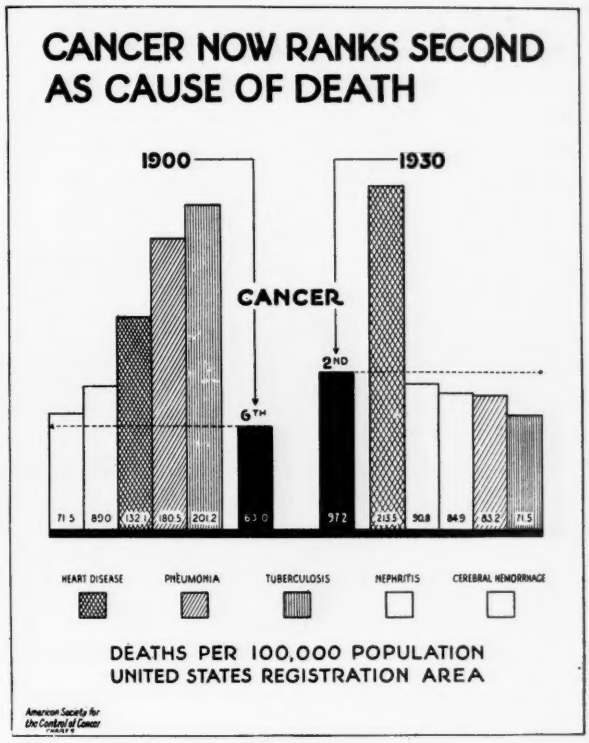


TABLE XII. TOTAL DEATHS, CANCER DEATHS, DEATH RATES AND PERCENTAGE OF ALL DEATHS REPRESENTED BY CANCER
Detroit—1914-1933

Year	Total Number Deaths	Cancer Deaths	Per Cent Cancer Deaths	Detroit Cancer Death Rate
1914	8,409	425	5.0	62.8
1915	8,749	424	4.8	58.1
1916	10,985	448	4.0	57.3
1917	11,736	478	4.0	57.2
1918	12,889	553	4.3	62.3
1919	11,336	577	5.1	61.3
1920	13,700	640	4.7	64.4
1921	10,386	695	6.7	66.1
1922	11,077	683	6.1	61.6
1923	13,047	784	6.0	67.2
1924	12,843	892	6.9	72.9
1925	13,680	895	6.5	69.9
1926	16,226	1,008	6.2	75.3
1927	14,435	1,043	7.2	74.7
1928	16,057	999	6.2	68.7
1929	16,571	1,126	6.8	74.5
1930	14,713	1,139	7.7	72.6
1931	13,390	1,137	8.4	71.0
1932	12,988	1,198	9.2	73.3
1933	12,432	1,130	9.1	67.8

In keeping with experience of other states and other countries, the number of cancer deaths in Michigan has shown a steady and marked increase, much greater than the increase in the population as a whole or in that portion of the population age 30 and above. In 1920 the cancer death rate in Michigan was 84.8 per 100,000. In 1930 it was 91.3 per 100,000. During the decade 1920-1930 there was an increase in total population of 32 per cent and an increase of 1.3 per cent in the population 30 years of age and over. During this same decade cancer deaths increased 42 per cent and the cancer death rate increased 7.7 per cent. It is thus seen that the cancer death rate increased more than five times as much as did that portion of the population age 30 and over during the same period. For nine years, 1914-1922, the cancer death rate in Michigan was approximately the same as for the United States. Since then this rate has been from three to nine points lower than that of the United States. In Table XI are shown cancer death rates for the United States and cancer deaths and rates for Michigan for the period 1914-1933, inclusive.

Information for Detroit similar to that for the State as a whole shows both a lower death rate and a lower percentage of all deaths represented by cancer. The cancer death rate in Detroit is a very favorable one for a city of that size.

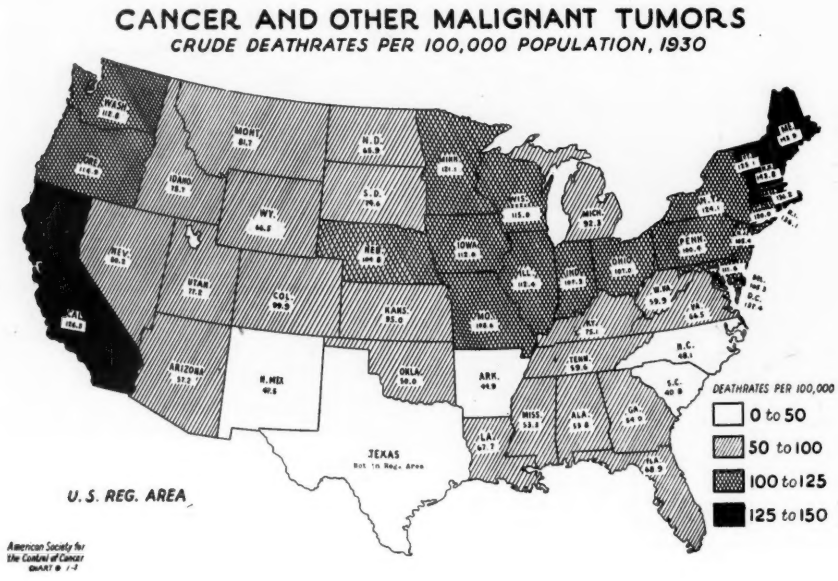
Rates noted in the preceding tables are crude rates. Adjusted rates show but slight change and for practical purposes of this survey are not so useful as are the crude rates which give a definite measure of the cancer patients encountered in the communi-

ty. Although some of these patients may reside outside Michigan, particularly in bordering Canadian communities, the professional and hospital facilities of the State are called on for treatment and such cases properly form part of the load carried by the cancer treatment facilities of the State.

Tables XIII and XIV show the percentage distribution of the population for 1930 and cancer deaths for 1933 by sex and age groups for the State and Detroit. It is recognized that the use of figures for different years in these tables does not give the absolute comparison, but for practical purposes they are of value, and show some interesting differences in the percentage distribution of cancer deaths, particularly as to age groups, between the sexes.

While the general death rate has decreased during the years covered by Tables XI and XII, a marked rise has taken place in both number of deaths and the death rate from malignant diseases. The question often arises, is cancer actually increasing or is the increase explainable on the grounds of improved diagnostic facilities and recognition of early cases?

The statistical information incorporated in this report would indicate an increase in the incidence of cancer independent of the improved diagnostic facilities and of the increasing percentage of the population now



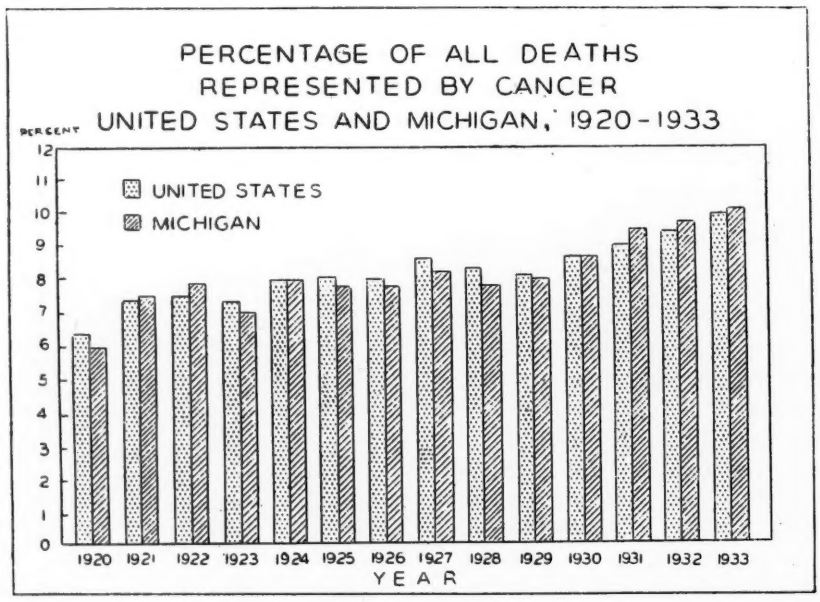

PERCENTAGE OF ALL DEATHS
REPRESENTED BY CANCER
UNITED STATES AND MICHIGAN, 1920-1933
PERCENT
UNITED STATES
MICHIGAN
0 1 2 3 4 5 6 7 8 9 10 11 12
1920 1921 1922 1923 1924 1925 1926 1927 1928 1929 1930 1931 1932 1933
YEAR

TABLE XIII. DISTRIBUTION OF POPULATION AND CANCER DEATHS BY SEX AND AGE GROUPS

Michigan

Age Groups	Total Population				Males				Females			
	1930 Population	Per Cent	1933 Cancer Deaths	Per Cent	1930 Population	Per Cent	1933 Cancer Deaths	Per Cent	1930 Population	Per Cent	1933 Cancer Deaths	Per Cent
All	4,842,325	100.	4,890	100.	2,519,309	52.3	2,307	47.2	2,323,016	47.7	2,583	52.80
Under 5	463,441	9.6	14	.28	236,070	9.4	9	.39	227,371	9.8	5	.19
5- 9	486,970	10.1	12	.26	246,844	9.8	6	.27	240,126	10.3	6	.23
10-14	455,469	9.4	10	.21	229,865	9.1	4	.17	225,604	9.7	6	.23
15-19	416,886	8.6	18	.39	209,141	8.3	13	.56	207,745	8.9	5	.19
20-24	418,202	8.6	27	.59	212,341	8.4	14	.61	205,861	8.9	13	.50
25-29	415,964	8.6	39	.81	217,402	8.6	17	.74	198,562	8.5	22	.85
30-34	391,854	8.1	70	1.47	207,425	8.2	25	1.10	184,429	7.9	45	1.74
35-44	730,393	15.1	398	7.94	398,081	15.8	132	5.72	332,312	14.3	266	10.30
45-54	496,896	10.3	823	16.83	268,310	10.7	320	13.86	228,586	9.8	503	19.47
55-64	308,484	6.4	1,156	23.64	161,285	6.4	541	23.44	147,199	6.3	615	23.81
65-74	181,117	3.7	1,401	28.65	93,843	3.7	730	31.64	87,274	3.8	671	26.00
75-up	73,774	1.5	921	18.83	36,977	1.5	495	21.45	36,797	1.6	426	16.50
Unknown	2,875	.1	1	.02	1,725	.1	1	.04	1,150	.1	...	...

TABLE XIV. DISTRIBUTION OF POPULATION AND CANCER DEATHS BY SEX AND AGE GROUPS

Detroit

Age Groups	Total Population				Males				Females			
	1930 Population	Per Cent	1933 Cancer Deaths	Per Cent	1930 Population	Per Cent	1933 Cancer Deaths	Per Cent	1930 Population	Per Cent	1933 Cancer Deaths	Per Cent
All	1,568,662	100.	1,130	100.	821,920	52.4	465	41.2	746,742	47.6	665	58.80
Under 5	146,610	9.3	5	.4	74,639	9.0	4	.86	71,971	9.6	1	.15
5- 9	148,173	9.4	4	.4	74,956	9.1	1	.21	73,217	9.8	3	.45
10-14	133,280	8.5	2	.2	66,409	8.1	..	...	66,871	8.9	2	.30
15-19	123,082	7.8	4	.3	59,216	7.2	4	.86	63,866	8.6	...	...
20-24	151,642	9.7	10	.9	75,248	9.2	4	.86	76,394	10.2	6	.90
25-29	170,272	10.9	18	1.6	89,944	10.9	11	2.30	80,328	10.7	7	1.05
30-34	160,573	10.2	22	2.0	87,439	10.6	7	1.50	73,134	9.8	15	2.25
35-44	275,647	17.6	153	13.5	156,877	19.1	52	11.20	118,797	15.9	101	15.20
45-54	146,857	9.3	234	20.7	82,017	10.0	80	17.20	64,840	8.7	154	23.20
55-64	69,142	4.4	276	24.4	35,149	4.3	111	23.90	33,993	4.6	165	24.80
65-74	32,033	2.0	273	24.4	14,969	1.8	130	28.00	17,064	2.3	143	21.50
75-up	10,283	.6	129	11.4	4,400	.5	61	13.10	5,883	.8	68	10.20
Unknown	1,041	.1	...	....	657	...	...	...	384	...	...	...

TABLE XV. CANCER DEATHS BY SEX AND SITE OF LESION

Michigan and Detroit—1933

		Cancer Deaths			
		Michigan		Detroit	
		Number	Per Cent	Number	Per Cent
All forms	Male	2,307	47.2	465	41.2
	Female	2,583	52.8	665	58.8
Digestive tract and peritoneum	Male	1,281	55.6	257	55.3
	Female	990	38.3	222	33.3
Uterus	Male	....	....	....	....
	Female	586	22.7	162	24.3
Breast	Male	6	.2	3	.6
	Female	489	18.9	128	19.2
Male genito-urinary organs	Male	433	18.8	72	15.5
	Female	....	....	....	....
Other and unspecified organs	Male	236	10.0	50	10.7
	Female	312	12.1	89	13.4
Buccal cavity and pharynx	Male	152	6.6	31	6.7
	Female	32	1.2	7	1.0
Respiratory system	Male	125	5.4	48	10.3
	Female	39	1.5	17	2.6
Skin	Male	74	3.2	4	.9
	Female	35	1.4	6	.9
Other female genital organs	Male	....	....	....	....
	Female	100	3.9	34	5.1

found in the older age groups, and of other factors which may influence the situation. The consensus of opinion of authorities on this question is that there is a definite increase in the incidence of cancer. This question was discussed by the Bureau of the Census on page 80 of its report "Mortality Rates 1910-1920."

"The contention that cancer is not actually, but only apparently, increasing seems no longer tenable. Better diagnoses undoubtedly account for part of the increase shown, but not for all of it. Figures for England and Wales, compiled by Dr. T. H. C. Stevenson, and published by the Registrar-General's report for 1917, clearly established an actual increase in mortality from cancer of accessible sites and our own figures presented in 1920 Mortality Statistics confirmed Dr. Stevenson's findings. For example, for females in the registration states of 1900, the 1900 adjusted death rate from cancer of the breast per 100,000 female population was 9.2 and the 1920 adjusted rate was 16.9, an increase of 84 per cent. For a site so accessible it is inconceivable that the difference in the above rates could possibly be due to difference in diagnostic power."

Figures for cancer of the buccal cavity, similar to those quoted above for cancer of the breast, show that in 1900 in the United States registration area, the death rate for buccal cancer was 1.6 per 100,000. By 1910 this had increased to 3.1 and by 1930 to 3.9 per 100,000. Cancer of the buccal cavity always has been easily accessible and the increase noted cannot be explained entirely on the basis of improved diagnosis.

Table XV, showing cancer deaths in Michigan and Detroit by sex and site of lesion, indicates the important place held by cancer of the digestive tract and peritoneum, particularly in males. More than 55 per cent of cancer deaths in males were due to its presence in these organs. Approximately 45 per cent of cancer deaths in women were in the reproductive organs and the breast. The most marked differences in cancer deaths in the two sexes are found in the buccal cavity and pharynx, respiratory system, and skin. In each of these locations, deaths in males are from two to six times as many as in females.

The most marked differences in percentage of deaths between the State and Detroit are seen in cancer of the respiratory system, which accounts for approximately twice the percentage of both sexes in Detroit as compared with the State as a whole, and cancer of the skin, where the position is reversed, showing about half as high a percentage of deaths from cancer of the skin in Detroit as in the State.

(To be continued in January, 1936, issue)

President's Page

THE DESTINY OF IMMORTAL MEDICINE IS IN YOUR HANDS

JUST three years ago, one of your presidents wrote a few lines in these columns. It was an inspired message. It was called "The Soul of Medicine." Out of that darkest night, it prophesied that uncurbed mundane greed would kill the soul of industry, the soul of banking, and even the Soul of Medicine. It warned that depersonalization of the human relationship between physician and patient, urged by those fanatically working to change radically the practice of medicine, would counterbalance all medical progress made since the days of Hippocrates and turn fruit into ashes.

Three years have seen some of the prophecy come true. Impersonalized banking has been dethroned, not without great loss and suffering to a people blinded by a golden image; grossly unethical industry has been throttled or put into stocks by legal compulsions. Medicine alone seemed to have recognized the danger in time, and through valiant preventives is in a fortuitous position to save its Soul from ruin.

The valiant preventives are simple, time-proven remedies; the principles of (a) personalized service between patient and physician which relation must remain as long as Medicine is a *healing* art; (b) fair dealing on a mutual basis, with the physician rendering good medical care—the best he can supply—to the patient, for which he receives reasonable compensation. Adherence to these principles—simple ethics—will keep Medicine in its niche as a noble profession and make compulsory legislation totally unnecessary.

Medical societies have the two-fold function of informing and serving their members and the public. Your State Society will continue and will augment its active work in these matters, and urges each and every county medical society to enter into the program of the coming five years, and to coöperate enthusiastically. The labor of bringing accurate up-to-date information concerning Medicine to the people is one in which every physician in the State must do his part if the message is to be heard by all. This means Knowledge on the part of the county medical society, its officers, its every member. More, it means that every county medical society shall garner into its membership every ethical physician in the community. This must be done at once. Start now.

Untruths, mistruths and half-truths concerning the practice of Medicine are being disseminated by groups and individuals. This propaganda must be dampened by the Truth coming down as a cloud-burst. Let every physician know the Truth and spread his knowledge as the rain. Knowledge is Power.

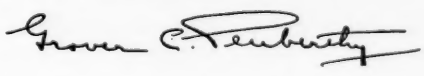
So long as the individual physician adheres to his social responsibility of ethically serving and educating his patients, the Soul of Medicine, even in its darkest travail, can never die.

* * *

Thank You for Support

Your president is grateful for the many expressions of support which the administration has received. He appreciates the willing acceptance of added responsibilities by members appointed to the committees. He has sanguine hopes and ambitions for a virile, achieving State Medical Society. He asks for continued support by the membership of the officers and committees.

On the eve of the holiday season, your president extends to you his sincere wishes for a Very Happy Christmas and a New Year full of health and prosperity.



THE JOURNAL
OF THE
Michigan State Medical Society

PUBLICATION COMMITTEE
A. S. BRUNK, M.D., Chairman.....Detroit
HOWARD H. CUMMINGS, M.D.....Ann Arbor
B. H. VAN LEUVEN, M.D.....Petoskey

Editor
J. H. DEMPSTER, M.A., M.D.
5761 Stanton Avenue, Detroit, Michigan

Medical Secretary
C. T. EKELUND, M.D.
35 W. Huron Street, Pontiac, Michigan

Business Manager
Wm. J. BURNS, LL.B.
2642 University Avenue, St. Paul, Minnesota
or
2020 Olds Tower, Lansing, Michigan

DECEMBER, 1935

"Every man owes some of his time to the upbuilding of the profession to which he belongs."
—THEODORE ROOSEVELT.

EDITORIAL

VALE 1935!

We are approaching the close of another year. Perhaps the most outstanding feature in Michigan medicine is the general awakening to the fact that the profession must stand together. There have been many factors that tend to make inroads upon medicine so as to render difficult the practice of medicine as it should be performed. These opposing factors vary with the locality. It is clear, however, that if the physician is not remunerated adequately for his services, he cannot render service that would otherwise be possible. It is not necessary to name the factors making it difficult for him to carry on. They are well known. If, however, there is any lesson to be learned from the year's experience, it is that as physicians, we must submerge minor differences and stand together. Nothing will be accomplished by a divided society.

The county medical society is the basic unit of organized medicine. It is in the truest sense democratic. That is, every member has a voice in the election of the various men who represent him for the year. It is not enough that president, secretary, council and trustees be elected; they should have the active support throughout their term of office of those who elected them. It cannot be too strongly emphasized that every eligible physician should be a member of his county society. The state medical society is no stronger than the aggregate of county societies can make it, and the American Medical Association is what it is by virtue of the delegates from the forty-eight states who constitute the directing body, the house of delegates. If one is not satisfied with the conduct of medical affairs, the remedy is not in remaining aloof as an outsider, but by giving the county society his support and thereby make his influence felt in shaping the policies and destinies of organized medicine.

The appointment of an executive secretary is an important forward movement. He will take care of the detail work of the state medical society under the direction of the medical secretary and the council. It will be the constant effort of this JOURNAL to keep the members fully informed in regard to various situations, economic, social, or other, as they arise. We would, therefore, urge, read your JOURNALS from month to month; preserve them for reference. Full reports of deliberations of the house of delegates, the council meetings and the meetings of the executive committee will appear soon after they are held. Keep informed and be ready at all times to render what service may be requested of you.

POST-GRADUATE MEDICAL EDUCATION

The necessity for post-graduate study is recognized not only by the majority of physicians, but many laymen as well are coming to realize that they get the best medical care from doctors who are life-long students. But what does education mean? Is it a matter of attaining a high degree of technical skill, or is it an enlarged understanding of the basic principles of an art or science? We like to look upon education as that which broadens the understanding; a truly educated person should be able to grapple with the unknown—a new situation. Charles Singer, the medical historian, once defined science as the effort on the part of man which concerns itself with the borderline between the known and the unknown. In a strict sense this means research. The scientist takes a long range rather than an

immediate view. To quote Singer, "The curse of the science of medicine, as of all sciences, has been the so-called 'practical man,' who will consider only the immediate end of his art without regard to the knowledge on which it is based."* In other words, emphasis is laid upon the importance of the principles of medicine rather than the details of the practice.

Many in this state have availed themselves of the post-graduate opportunities that have been brought almost to their door, by the joint efforts of the Michigan State Medical Society and the Department of Post-Graduate Medicine of the University of Michigan. How many have pursued the work with Singer's idea in mind, that a real post-graduate education should aim at a knowledge of underlying principles of medicine and surgery rather than the ability to perform "stunts" (a more dignified term would be technic), the importance of which we would in no sense belittle? It is one thing to know how to make a skin test for tuberculosis or to perform a Schick test for diptheria; it is of greater importance to understand the principles of immunity. It is highly essential for a surgeon to acquire a skillful technic for a gall-bladder operation; it is of even greater moment to understand the changes and to diagnose the conditions which render the operation necessary.

How many of those who have attended the post-graduate courses held at the University and in Detroit as well as other centers, have done so with the purpose of acquiring real education in the time allotted? Much may be attained in the short intensive courses if pursued in the right spirit.

Another means of post-graduate study is the reading of medical journals. The first paper in this number of the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY is virtually a monograph on the subject; each of the other contributions merits close study by those interested in the subjects with which they deal.

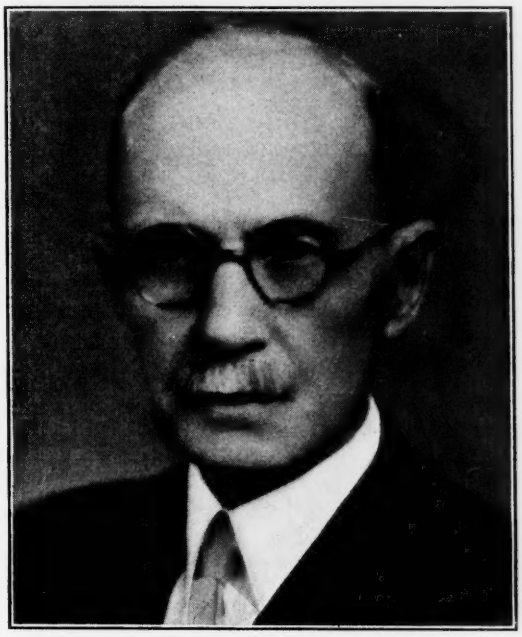
Master technic by all means. However, if post-graduate medical education does not accomplish more than this, it has failed of its highest achievement. It can fulfill its function only if the physician attend the entire course in which he is interested and make the course progressive from year to year.

*A Short History of Medicine by Charles Singer, page 62.

DR. WILLIAM M. DONALD

**"Sounding in moral virtue was his speech,
And gladly would he learn and gladly teach."**

Dr. William M. Donald of Detroit has been appointed professor and chief of the Department of Medicine, Wayne University Medical School, Detroit. Dr. Donald has been on the faculty of the Detroit College of Medicine for over a quarter of a century.



WILLIAM M. DONALD, M.D.

He became head of the department of medicine, succeeding the late Dr. George McKean. Dr. Donald is a graduate of the McGill University, Montreal, where he first met the great Osler, concerning whom he has very vivid recollections as teacher and outstanding personality. Dr. Donald attended and later graduated from the Detroit College of Medicine. He has always pursued general practice and as such calls to mind other great internists such as Sir James McKenzie, who refused to be designated by other than the term "general practitioner."

During his long career in medicine, Dr. Donald has never ceased study. He exemplifies that fine type of medical practitioner who excels equally in both the science and the art of his calling. Genial in manner, he has proven himself a genuine friend of all students. Perhaps the attitude of the graduate towards an old medical teacher cannot be expressed better than by a remark made about Dr. Donald by one of his

old students, "When I meet him, say, in the elevator of the building, I always feel like standing back and repeating the declaration in the Hippocratic Oath, 'I will reckon him who taught me this art equally dear to me as my parents'." Many others perhaps who have not recalled the Hippocratic promise have doubtless felt the same way.

On Dr. Donald, as we have announced, was conferred the honorary degree of Doctor of Science in Medicine by the Detroit Board of Education, the governing body of Wayne University, at the last annual graduation.

He was recently elected chairman of the Beaumont Foundation in connection with the Wayne County Medical Society. Dr. Donald has occupied this position before, and perhaps, outside his college work, there is nothing in which he takes greater interest than the selection of the speaker for the annual Beaumont lectures, a tradition quite in keeping with the spirit of medical education inasmuch as the Beaumont lectures each year are on some subject basic to both medicine and surgery and allied specialties.

INSIDIOUS PROPAGANDA

Under the heading The Decline of the Professions, *Harpers' Magazine* for November, appears another article somewhat cryptic which leads up to a proposed solution of the so-called medical problem by socializing medicine. The author is Harold J. Laski, Professor of Political Economy in the University of London. Laski is a clear, forceful writer when on his own subject, namely, government, but somewhat reckless when it comes to suggesting a way out for another profession of which his knowledge smacks of the amateur.

The professions that in Laski's opinion, "ain't what they use to be," are Law and Medicine. He devotes much less space to journalism and architecture. Passing over his interesting analysis of law which he should be competent to discuss, he pays his respects to medicine. The average doctor who becomes a general practitioner, he goes on to say, is largely a prisoner serving a life sentence. His success depends only partly on his scientific skill, more upon his bedside manner, his social graces or the social graces of his wife; or he may fail to make headway because of his inattention to some rich neuresthenic. He falls behind because he does not take a long holiday for fear that his practice will disappear to his rivals; hence, he is unable to keep abreast of medical advances by post-graduate studies. The writer is evidently describing conditions in England rather than in the United States.

A person is a prisoner at anything only if he feels himself so. It is true the family physician at times works long hours but where this gives him a sense of economic security, he is anything but a prisoner serving a life sentence. He derives great satisfaction from his work and is therefore the freest of men so long as this lasts. In the United States and particularly in Michigan, post-graduate facilities are brought right to his door. He may embrace the opportunity with the minimum sacrifice of time from his professional work if he so desires.

Speaking of the treatment meted out to rich and poor, he says: "With noble and notable exceptions, it is largely true in Great Britain that a successful panel-doctor under the insurance system cannot hope to grapple adequately with his patients," and again, "It is notable that a rich man who fights a charge of being drunk when driving a car is almost invariably able to bring a private physician to encounter police evidence brought against him: it is also notable that a poor man under a similar charge rarely appears able to secure such evidence on his behalf." These are situations which, if true, apply entirely to England and are an indictment against the system that prevails there. Presented to American lay readers they are obviously wholly misleading.

A charge is brought against the medical profession for its alleged indifference to matters pertaining to public health. This, also, will hardly square with the facts. In refutation, we quote from another English medical writer well qualified to speak. No less a person than Sir George Newman, chief medical officer for the Ministry of Health of Great Britain, contends that the advance in the prevention of communicable diseases and sanitation had its beginning and continuance in clinical medicine. After mentioning the great Sydenham, whom he declares to be the first of the epidemiologists, he goes on, "Then in the eighteenth century comes a succession of clinical practitioners. Mead, Floyer, Sloan, Fothergill, Lettsom, Cheselden, Huxham, Heberden,

Hoggarth, Hewson, a group of obstetricians, the Hunters, Pringle, Pratt, Withering, Blane, Baker, Baillie, Jenner, and every man of them left a mark on English medicine and as we shall see, laid the clinical basis of preventive medicine."

Laski's solution for both medicine and law is to organize them as public services. The legal profession should be under government control and should work for the public for a fixed salary. For medicine, he would extend the idea of insurance for medical care to all members of the population. Of course, this is state medicine in the fullest sense of the term. Mr. Laski's paper, interesting as it is, is about as germane to the problem of medical care as it presents itself in America, as a paper written by an educated American layman would be to similar problems in the British Isles.

THE SECOND CAUSE OF DEATH

Under the auspices of the Cancer Committee of the Michigan State Medical Society will appear in this JOURNAL a series of six brief papers on the cancer problem for members of the medical profession who first see cancer patients. The papers will be printed unsigned, but with the assurance that each is prepared by some one eminently qualified, and all with the endorsement of the committee. A vigorous campaign has been inaugurated to inform the public of the insidious nature of cancer and of the importance of an early diagnosis if a cure is to be effected.

A series of newspaper releases has already been employed and the responses indicate marked interest in the subject on the part of the laity. These will be supplemented by addresses by physicians to lay groups such as luncheon clubs, women's clubs and parent-teacher associations as well as senior students in high schools. The knowledge desiminated among such groups presupposes preparation on the part of the entire medical profession to meet possible patients who seek medical advice. Coincident with the papers mentioned will appear instalments of the Report of the Cancer Survey which has been very carefully prepared and which merits close study.

"Hostile philosophies war with one another, like male and female, and become fruitful only when they merge."—Will Durant.

HOW STATE MEDICINE WORKS IN AUSTRIA

(New York State Medical Journal)

Ten per cent of Austria's doctors "are totally unemployed and without means of subsistence," according to a special wireless dispatch from Reginald Sweetland to the *Chicago Daily News* Foreign Service, and 20 per cent are trying to live on fees of less than $30 a month. This is under a regime of state medicine. It seems that of the 8,000 registered medical practitioners 7,000 are able to earn a subsistence wage in examining patients for the State social insurance scheme and Federal clinics. This number is to be reduced by about 4,500 under a new law which virtually closes the door of private medical practice.

Roughly 80 per cent of Austria's 6,000,000 population are beneficiaries in State social insurance schemes and as such they get practically free medical attention, the State paying but a tip to the doctors qualified by the Government to deal with such State business.

Under the stipulations of the law of last April 1, which is now having disastrous effects upon the medical profession, 80 per cent of all Austrians under the social insurance scheme are limited in selecting their own private physicians, since the State pays the medical fees for such patients with the natural result that the Government, in usurping the clientele of private medical practitioners, is reducing them to financial despair and destitution.

MERRY CHRISTMAS

Oh! Ah'm nae sae verra happy
'Boot th' men an' women noo,
Wha are sayin' that we're "batty"
'Cause o' certain things we do.

They are sayin' there's nae Christmas
Nor ony Santa Claes,
An' ringin' bells is just a witness
O' oor funny mental haze.

Bit, ah dinna care aboot th' change,
New deals are nae for me,
Ah'll ring thae bells wi' candy canes
An', a wee bit bairnie be.

Ah'll hang ma stōckin's by th' lum
An' dress like Santa Claes,
An' trim th' tree when nicht is mum
An' hae th' grate ablaze.

An' wull ye no come ben some day
This merry Christmas time,
An' help us tae be blythe an' gay
Wi' feast an' song an' rhyme?

WEELUM.

If you are tempted to reveal
A tale someone to you has told,
About another, make it pass,
Before you speak, three gates of gold,
Three narrow gates—first, "Is it true?"
Then, "Is it needful?" In your mind
Give truthful answer; and the next
Is last and narrower: "Is it kind?"
And if to reach your lips at last
It passes through these gateways three,
Then you may tell the tale, nor fear
What the result of speech may be.
—From *The Arabian*, quoted in *The Rainbow.*

MEDICO - LEGAL DEPARTMENT

UNJUST MALPRACTICE CASES

By HERBERT V. BARBOUR*
Detroit, Michigan

The editor of THE JOURNAL has suggested some subjects that he thought would be of interest to the profession, but has permitted the writer to use his discretion as to when they should be presented. It is agreed, however, that any articles on recent cases illustrative of practice and technic to be observed by doctors to protect themselves properly against unjust malpractice cases should come first.

Very recently I assisted in the trial of a case against a very competent member of the State Society who, in my opinion, was unjustly accused. The case involved a fracture of the neck of the femur of a man about thirty-two years of age. To the average juror, a fracture of the greater trochanter, or the head of the femur, or the acetablum, or any bone in that region, is known as a "hip" fracture, and it is the common belief of the layman that any so-called "hip" fracture requires special attention and long immobilization. It does not occur to the average layman that a good result without shortening is extremely difficult to obtain.

In the case at bar, a Whitman cast was applied and x-rays taken before and after the application of the cast. After six days, the patient was permitted to return to his home, which was considerable distance from the hospital.

The plaintiff claimed that the physician did not call to see him for the next six weeks (which claim was denied by the doctor), and that when he did come out at the end of six weeks he removed the cast but took no x-rays before removing it, and did not take measurements of the leg after the cast was removed. The doctor denied these charges.

Other claims of negligence were that the cast was permitted to loosen at the top, and that after the cast had been removed for only a few days, defendant instructed plaintiff to discard his crutches and walk on the leg.

The expert witness for the plaintiff—a physician who has testified, according to his own statement, thirteen or fourteen times in malpractice cases in Michigan and who admitted that he had testified the week before in a tonsillectomy case—furnished the necessary testimony to carry the case to the jury. He first stated that he was familiar with the practice in this locality where the alleged malpractice occurred, although he had never seen an operation in that city or in any city of similar size in Michigan, and that the usual and ordinary practice was to apply the Whitman cast practically to the armpits and to keep the cast tight for the purpose of furnishing traction, which, of course, you readers will recognize as ridiculous.

The other alleged errors in treatment, according to the testimony of this witness, were in not making daily calls on the patient after the cast was put on, in not making repeated x-ray pictures after the cast was applied, and in permitting the patient to be taken home after being in the hospital only six days after the cast was applied.

The writer feels sure that the defendant in the case was guilty of no malpractice, but the hospital charts were not in the best of condition, and unfortunately the defendant had written in the words "impacted fracture," which he meant to explain the position of the bones after the fracture had been reduced. No memorandum was made at the time the measurement was taken after removal of the cast, although it later appeared on the hospital chart, but not on the office records of the physician. This brings me to the points which I want to illustrate and urge physicians to observe in treatment of similar cases in order to furnish a proper defense, knowing there is a physician in this state who will testify to such absurd requisites in the treatment of such cases. Summarizing, I want to emphasize the following points:

1. In cases of so-called "hip" fractures, unless there are strong contra-indications, keep the cast on for a considerable period of time, for instance, ten or twelve weeks.
2. If possible, before removing the cast, take an x-ray even though it will perhaps not give much evidence of union, either callus or bony.

*Mr. Barbour is attorney for the Michigan State Medical Society.

3. Give written instructions, if possible, as to when to discontinue the use of crutches, or give orders in the presence of witnesses.

4. Have some written memoranda concerning your original statement to patients of the difficulty in many instances of securing even a useful leg and the almost certainty of shortening, as the plaintiff and other lay-witnesses testified in this case that the doctor told them they could be practically assured of a perfect result.

It is the hope of the writer that these articles which will appear from time to time will help eradicate the seemingly increasing menace of unjust malpractice cases. This does not mean that in the opinion of the writer there are not some causes for complaint, because I have had cases where I felt there was some question as to whether the doctor had given proper attention to the case. Such cases are so much in the minority that they are almost negligible in number, and when such cases arise I always urge that, if possible, they be settled for the actual damage resulting.

DIETING

Ah'm readin' a' th' literature
That's comin' frae th' press,
Aboot th' diet an' th' cure
For those wha's i' distress.

They recommend some orange juice,
Some rice an' macaron',
Bananas too are noo in use
An' whitefish aff th' bone.

Yer no tae eat substantial meat
Or candy, cake or jams,
Nor sic a thing as auld pig's feet
Or guid auld yellow yams.

An' noo they say at noon tae tak
Twa slices o' broon bread,
Wi vegetables frae th' sack,
Nae cooked noo they've said.

They gi' ye this an' gi' ye that,
Forgettin' a' th' best,
Like finnan haddie an' oat cake,
Oat meal an' watercress.

Oh gi' me those wha'll let me eat
Ma porridge an' short breed,
An' scones that's baked upon th' peat
An' Haggis—a' ah need.

WEELUM.

"Knowledge and Wisdom, far from being one,
Have ofttimes no connexion. Knowledge dwells
In heads replete with thoughts of other men;
Wisdom in minds attentive to their own.
Knowledge is proud, that he has learnt so much;
Wisdom is humble, that he knows no more."

COWPER.

BE PREPARED FOR YOUR CANCER PATIENT

RESPONSIBILITY OF THE PHYSICIAN TO THE CANCER PATIENT*

In each of the next six numbers of the JOURNAL there will appear a short article dealing with cancer. These articles are being prepared by the Cancer Committee of the Michigan State Medical Society and are intended to make the medical profession more cancer-conscious. A disease which rates second as the leading cause of death in the United States—more than one death per thousand population each year—should require little stimulation to make it a subject of intense interest. Yet a strange apathy exists on the part of the public and in some quarters of the medical profession. The attention of every one is at present focused upon the large number of automobile deaths and the topic is on everybody's lips; yet the fact that there are five times as many deaths from cancer seems to create no alarm. It is probably safe to say that if a new epidemic occurred in our state during the next year, which caused fifteen deaths, we would read about it in big black headlines, but fifteen deaths from cancer in Michigan every day, month in and month out, occasions no particular comment. Perhaps an attitude has developed similar to that toward rainy weather—we don't like it but don't know what can be done about it. Well, it *is* a discouraging disease upon superficial examination but the more familiar one becomes with the subject the more one becomes impressed with its curability. At the last Clinical Congress of the American College of Surgeons 25,000 authenticated five-year cancer cures were reported and probably a larger number have not been reported. Without any doubt these cases were detected early and adequate treatment instituted promptly.

The accusation comes from the laity and also from within the profession that nothing is known about the cause and the cure of cancer and the doctors are helpless. This is of course untrue. A great deal is known about the cause of cancer; the disease can be pro-

*This is the first of a series of six articles under the authorization of the Cancer Committee of the Michigan State Medical Society.

duced experimentally and transmitted from one animal to another. And, while it is true that no cure-all for cancer exists, more advance has been made in the detailed knowledge of cancer during the last twenty-five years than in all previous medical history. Progress in the solution of the cancer problem is slow but constant, and the popular desire for a spectacular solution will probably never be satisfied.

The responsibility of the physician is rapidly becoming heavier and is two-fold: 1. The secret of successful treatment depends almost entirely on one thing—*early diagnosis*, and the result rests largely with the physician who first sees the patient. 2. The public is continually acquiring cancer facts and is demanding more. With this ever-increasing fund of information the potential cancer patient is turning to his doctor for that knowledge and counsel which he should rightfully expect. A doctor is occasionally heard to remark that he sees very few cancer patients and is not particularly interested in its treatment. He probably does not actually mean that, but sometimes if he were more interested and more alert he might "see" more cancer cases. Besides, the rapid accumulation of knowledge regarding the cause of cancer is opening up a large field in cancer prevention which should be an active part of any physician's practice.

A special study of cancer can well be recommended to anyone interested in medical science because it is an intensely fascinating subject and presents a panorama which is moving more rapidly than any other phase of medicine. It behooves every physician to acquaint himself or herself thoroughly with this subject and to stand ready to answer the questions which are sure to come in increasing numbers. He or she, in this way, fulfills the concept of the true physician, which includes the rôle of teacher and adviser. Rather than wait for some non-medical organization to undertake the education of the public in his community it would be more advantageous and more becoming to the members of the medical profession in that community to assume the responsibility of cancer education themselves. This can be done in many ways. An aggressive campaign can be instituted to spread cancer information in high schools, parent-teacher organizations, church societies, and clubs. Lay people can be told what cancer is, why an early diagnosis is important, what some of the common danger signs are and what can be offered in treatment and prognosis. In this way much misinformation and many misapprehensions can be combated. Curability should be emphasized. Cancer quacks and advertised cancer cures should be warred against relentlessly. People should be taught that having cancer constitutes no social disgrace. The whole subject should be brought out into the open, viewed from all sides and discussed freely. The time-worn argument, which fortunately has almost completely died a natural death, that cancer information creates a "cancerphobia" is occasionally revived. Nothing could be more fallacious. People so inclined would probably be worrying about something else if it were not cancer. Over 125,000 people die of cancer in the United States each year but there are no deaths from "cancerphobia."

In the past the hopelessness of cancer has been emphasized. We are all familiar with the late stages of the disease but few are familiar with its early stages. A far advanced cancer is a wonderful asset to a pathological museum and may be a fine object lesson to someone, but its diagnosis is of slight benefit to that particular patient. Our views on cancer need to be reversed. We should begin to focus our attention on its very beginning instead of its end stages. It has been said in exaggeration that the time to cure cancer is before it starts—a statement which contains a large kernel of truth.

If there is any doubt about the value of an educational campaign in cancer one has only to turn to the effectiveness of education in tuberculosis, a disease which has many things in common with cancer. Between 1900 and 1933 the death rate from tuberculosis in the United States has decreased from 201.2 to 59.5 per 100,000. Of course, this was not accomplished without the expenditure of large sums of money from both private and public sources and it must not be imagined that the cancer problem can be solved without expense. Many things must be done. A huge amount of investigative work is still necessary. Organized research is expensive. Members of the medical profession are frequently in an influential position. They are occasionally in a position to influence the direction in which a portion of

a fortune or an estate is to go. There is no more worthy outlet for philanthropy.

Cancer imposes many economic and social responsibilities on the profession. Unfortunately many cancer patients are destitute and there are others who could meet the cost of ordinary illness but not of cancer. Unless the erection of large government-administered cancer institutions is desired, it is necessary that the medical profession assume much of the social responsibility entailed.

A great opportunity with both interesting and profitable aspects beckons to the medical profession. Humanity can be richly served by preaching and practicing the doctrine of cancer prevention, early diagnosis, prompt treatment and by substituting intelligence and optimism for ignorance and unreasonable fear. Fight cancer with knowledge. Cancer education, cancer diagnosis and cancer treatment are problems to be dealt with by the medical profession.

Nonunion in Fracture of Shaft of Humerus: Report of Five Cases

James Warren Sever, Boston, is of the opinion that delayed union and nonunion occur more often in the middle third of the shaft of the humerus after transverse fracture than in any other long bone. Spiral fractures that involve this region may be slow to unite, but so far he has known of no nonunions, or pseudarthroses. Of the five cases that he reports, three occurred in his practice and two are the misfortunes of others. He believes that one should report failures as well as successes and that there must be some intrinsic cause for nonunion in fractures of the humerus that is not wholly understood. Trauma, from the accident itself, may so destroy the power of bone repair that union is delayed or prevented. Interference with the blood supply through the tearing of the nutrient artery may be another factor. Lack of adequate fixation, which is of the greatest importance, is another probable cause; and in the operative repair, primary internal as well as secondary external fixation is essential for a long period. However, it is practically impossible to immobilize the humerus completely in any type of external apparatus. In spite of an adequate consideration of all these factors, recurrent nonunion may, and does, occur in a certain percentage of cases. Lack of callus formation and interposition of tissue are often factors that must be considered. After his experience in the reported cases, the author believes that the only operation probably worth doing is that advocated by Campbell and Henderson; namely, the massive or onlay graft, followed by a sufficiently long period of fixation to ensure union and to carry one by the period of absorption and possible fracture of the graft. Even this operative procedure is, however, not infallible.—(*Journal A. M. A.*, Feb. 2, 1935.)

PRESIDENT'S NIGHT

The president's night in connection with the annual meeting of the Michigan State Medical Society is always an event of more than ordinary consequence. At the seventieth annual meeting of the Michigan State Medical Society held at the Sault, the president's address was read by Dr. Richard R. Smith. Dr. Smith's address has already appeared in the October number of this JOURNAL. Dr. Smith introduced his successor, Dr. Grover C. Penberthy, who made his address of acceptance.

Mr. President, Members of the State Medical Society, Ladies and Gentlemen:

It is a real pleasure for the Chippewa-Mackinac County Medical Society to have this opportunity of entertaining the members of the State Society at an Annual Meeting.

As you know, we have been trying for quite some time to convince you that the Soo was an excellent place for the State Meeting to be held. We want you to have a good time while you are here, and we assure you that we will do everything we can to make your visit a pleasant one.

To Doctor Smith, our president for the past year, we offer our congratulations for the successful management of the affairs of the State Society.

To Doctor Penberthy, our incoming president, we pledge our sincerest support wholeheartedly.

To Doctor Corbus, who for many years has been a valued officer of the State Society, and for the past year its secretary, we offer both our congratulations and thanks for the thorough and efficient manner in which he has arranged this meeting, and in general conducted the office of secretary. It is with sincere regret we see him retire to the ranks, but there we will still be blessed with his advice and counsel.

F. C. BANDY.

Dr. Penberthy's Address of Acceptance

Doctor Smith, Ladies, Members of the State Society and Guests:

The honor which has been conferred upon me by this Society is appreciated, and no one realizes more than myself, the responsibility that goes with the office of president. Being an officer can no longer be considered as occupying an honorary position. As your president I, therefore, ask your loyal support and guidance.

The history of the Society shows that I am following in the footsteps of distinguished gentlemen —leaders as well as good clinicians. This fact emphasizes the responsibility entrusted, to work with the other officers in supporting and maintaining the traditions of the past.

Doctor Smith has given us a picture of Michigan's past and present and the changes which have taken place in medical practice during the various historical stages of the state. The progress made in medicine stands out as in no other profession and one only needs to refer to the vital statistics to realize how fortunate we should feel living in this age. The United States Public Health Service reports for the year 1933, the lowest general death rate ever recorded for the nation. The pioneers in medicine in this state rank as outstanding leaders and as it has been said, the present high standard of practice reflects glory and honor to those who blazed the trail.

The present standard of practice and what is expected of the physician today requires a good academic and medical preparation, continued application to the study of medicine and an interest in the economic aspect of practice. One can no longer feel that, having completed the required curriculum

in the medical school and hospital, he or she will be satisfied to remain static. He cannot be as Osler once described a physician: "Once he was a modern, twenty years ago; but he crawled up the bank, and the stream of medical progress has left him there, but he does not know it." With the tempo set by business and living in an age where changes are rapidly taking place and many conventions are swept aside, we of necessity as a profession, must be awake to our collective responsibility.

To quote from an address delivered by Doctor VanEtten, now speaker of the house of delegates of the A. M. A., and a student of medical economics: "We struggle for employment or fall into the mass of those who cannot keep up with modern rhythm. From birth to death we all live by the clock. The physician rates no exception. The compelling pulse of progress beats also for him. If he fails he cannot eat, cannot pay his rent, his fuel bill, taxes, etc. If modern society rates him successful he must step faster and sleep less than others. He cannot be content with being on time, he must be ahead of time."

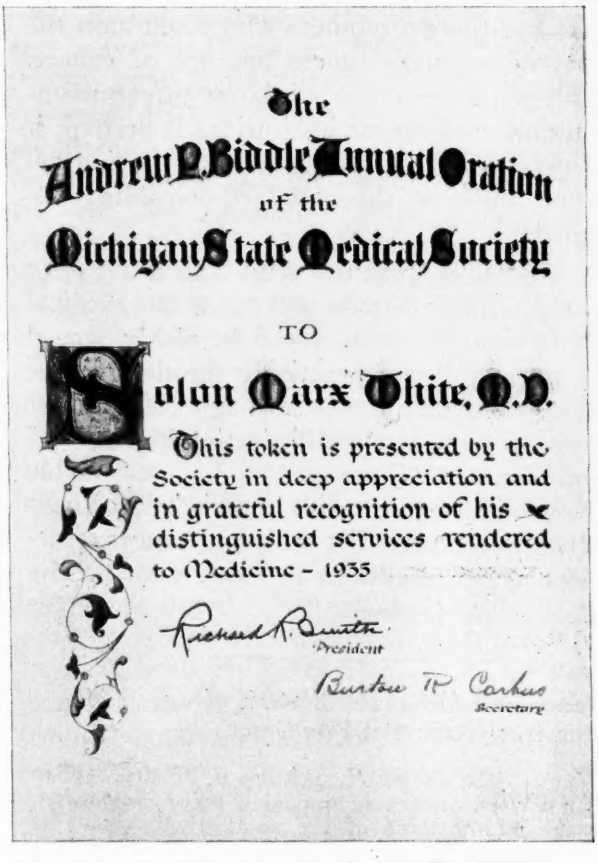
It is the ambition and desire of all to enjoy a feeling of security and realize from our efforts a just compensation. The physician in all communities has taken an active part in the civic "set-up" and will continue to contribute to the maintainance of and the up-lift of any social program. It is apparent, however, that with what he has contributed in the way of public health education, in the development of preventive and curative medicine, acting in all emergencies where medical science is needed and many other causes, he is not altogether appreciated by the people whom he serves. This fortunately does not apply to all communities nor is it general, as faith in the physician is still manifested. The family physician will always be the father confessor. The present attitude of the public is all a part of the unrest and the general educational program in which the physician has taken an active part. The challenge that has been thrust at organized medicine the past years will be met by the doctor who will give to the public the highest quality of service which he is capable of rendering.

The problems that confront the professional groups today may appear out of proportion, but those who have gone before us had their problems, and it is a well known fact that history repeats itself. The interest of the thinking group has been aroused. This, combined with constructive, unified action, not founded on prejudice nor emotional reasoning, should assure us that the traditions and the educational program established will be continued for the welfare of the public and for us as a profession.

The interest shown by members of the profession of this state in these past years, to improve their clinical knowledge by attending the post-graduate courses given in the various centers, to say nothing of the clinical pathological conferences held weekly in many hospitals, is encouraging. The attendance last year far surpassed that of previous years and without a doubt this record will be enhanced in the coming year. What can be more reassuring and gratifying to the public than to know that the physician is conscious of his medical responsibilities and takes time out, many from a busy practice, to prepare himself to render the highest type of service?

* * *

The scientific address of the evening was presented as the Andrew P. Biddle Foundation lecture. The subject was "The Present Status of the Hypertension Problem," given by Dr. Marx White of Minneapolis. This address is the leading article in the present number of the JOURNAL. Following the address, Dr. White was presented with the first certificate of recognition issued by the society. An illustration of this splendidly decorated certificate is here presented. The original is not only in black and white but the initial letters are ornamented in colors.


The
Andrew P. Biddle Annual Oration
of the
Michigan State Medical Society
TO
Salon Marx White, M.D.
This token is presented by the Society in deep appreciation and in grateful recognition of his distinguished services rendered to Medicine - 1935
Richard R. Smith
President
Burton P. Carhus
Secretary

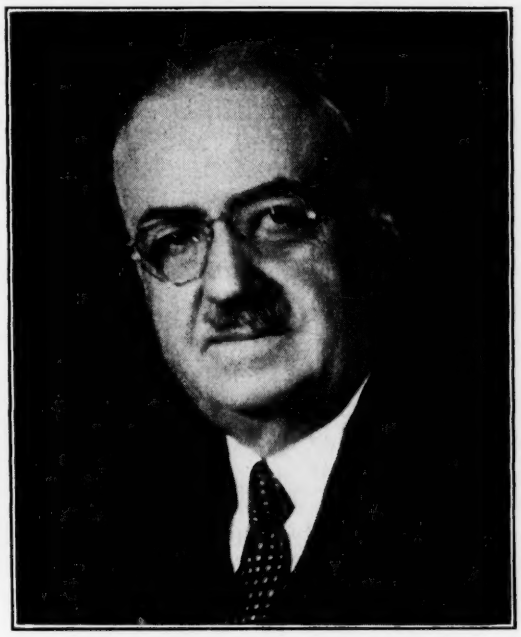
President Smith's Introduction of Dr. White

During the past year at a meeting of the officers of some of our sections, a proposal was made to request the Council to inaugurate an oration, to be known as the Andrew P. Biddle Oration, to be given each year at our annual meeting by some outstanding member of the medical profession. The Council eagerly accepted the idea and this occasion is the result. The name of the oration may be changed from time to time to honor other distinguished members of our Michigan profession, but surely we could have selected no finer example of high ideals, and of what the profession stands for and seeks to follow than Andrew P. Biddle of Detroit. Dr. Biddle regrets very much his inability to be present at this meeting. He is to give the principal address at the Convocation to be held in connection with the opening exercises of the Medical School at Ann Arbor next Monday, at which time an honorary degree will be conferred upon him.

This year there has been selected to give this oration a man of marked distinction in medicine. Dr. White has all during his professional career been intimately associated with our finest institutions of learning, and has since 1919 been Professor of Medicine in the Minnesota Medical School. He was honored with the Presidency of the American College of Physicians in the year 1931-32. He is a great teacher, has been a generous contributor to medical literature, and is known for the soundness of his views and his ability to impart them by written word and speech. I have the honor, Dr. White, speaking for our society, to present to you this token of our appreciation of the services you

have rendered to medicine, and to introduce you to an audience of Michigan doctors and their friends.

Dr. White will speak on the "Status of the Hypertension Problem."



SOLON MARX WHITE, M.D.
Minneapolis

Dr. White, who delivered the first Andrew P. Biddle lecture at Sault Ste. Marie during the seventieth annual meeting of the Michigan State Medical Society, is a native of Minnesota. He received his Bachelor of Science degree from the University of Illinois in 1896, and his M.D. from the Northwestern University Medical School in 1897. He served his internship, 1897-1898, in Cook County Hospital, Chicago. From 1898 to 1904, Dr. White was instructor in pathology and bacteriology in the University of Minnesota Medical School. He was assistant professor of medicine, 1904-1908; associate to 1915. He has been professor of medicine from 1915 to the present. He is one of the founders, and is director and chief of the department of medicine of the Nicollet Clinic. Dr. White served in France during the war as chief of medical service, Base Hospital, 26 Allerey, France. Dr. White is a member of a number of state and national associations having to do with specialized fields of medical science. He is, also, a contributor to the following journals: *The Journal of the American Medical Association, Journal-Lancet, Archives of Internal Medicine,* and *Annals of Internal Medicine.*

I could never divide myself from any man upon the difference of an opinion, or be angry with his judgment for not agreeing with me in that from which perhaps within a few days I should dissent myself. . . . Where we desire to be informed, 'tis good to contest with men above ourselves; but to confirm and establish below our own, that the frequent spoils and victories over their reasons may settle in ourselves an esteem and confirmed Opinion of our own.

SIR THOMAS BROWN in *Religio Medici.*

Boondoggling With a Health Survey in New York

Among the peculiar projects proposed by the WPA in New York State is one that has aroused the wrath and ridicule of a good many people. It was proposed to survey the deaf children in the county of Monroe at an estimated cost of $10,440, Monroe County to pay $1,390. In opposition to the survey, the Subcommittee on Deafness and Hard of Hearing of the Public Health Committee of the Medical Society of the County of Monroe offers the statement that it is impossible to detect deaf children before the age of three years. The public and special schools take these children over at five years of age. Therefore, the whole project is limited to children between the ages of three and five years. There is good evidence that the county of Monroe contains sixty of these children. Evidence from the head of the bureau for handicapped children in the New York State Education Department at Albany accounts for only fourteen such children, exclusive of those already cared for. Hence it is proposed to spend $10,440 to survey fourteen children. Furthermore, the survey proposes subsequent training of the deaf child but the project makes no provision for such training. If ever a project was developed to which the word boondoggling could be quite certainly applied, this project qualifies.—*Journal A. M. A.,* Nov. 16, 1935.

Choice and Interpretation of Tests of Renal Efficiency

R. H. Freyberg, Ann Arbor, Mich. (*Journal A. M. A.,* Nov. 16, 1935), shows that the Lashmet-Newburgh concentration test is the only test which tends to measure the maximal function of the kidneys, and for this reason it is the most sensitive test of renal efficiency, often demonstrating impairment of function when other tests fail to do so. It does not require the quantitative collection of urine. Except when performed in the presence of loosely held edema, it always gives accurate results, and low specific gravities always indicate renal abnormality. The urea excreting function of the kidneys, as measured by the urea clearance test, becomes impaired in many cases after the concentrating ability is diminished, so that the urea clearance is a less sensitive test of renal efficiency. Throughout the greatest part of the range of kidney function, the urea clearance and concentrating ability in general parallel each other. When the renal damage is severe, the specific gravity becomes fixed at a low level and the urea clearance alone indicates progression of the renal lesion. Failure to obtain quantitatively the urine formed by the kidneys during the urea clearance test will falsify the results. Low urea clearance always indicates renal abnormality, except when the urine volume is less than 20 c.c. per hour. The two-hour phenolsulphonphthalein excretion is not a sensitive test of renal efficiency. Theoretically, the fifteen-minute dye excretion is a sensitive test of kidney function, but the obstacles to satisfactory execution of this test cause it to be unreliable. When a normal amount of dye (28 per cent or more) is excreted during the fifteen minutes after injection, one is safe in assuming that no appreciable renal damage exists. When low excretion is found, interpretation is hazardous. Normal blood urea and nonprotein nitrogen may exist even when extensive renal damage is present, so that these values are poor indications of renal functional ability. Elevated blood urea, nonprotein nitrogen and urea ratio indicates only that the renal excretion of protein wastes is inefficient and does not necessarily indicate renal abnormality. In order to have the most accurate and complete information regarding functional ability of the kidneys, the concentrating ability and the urea clearance should be determined.

DEPARTMENT OF SOCIETY ACTIVITY

C. T. EKELUND, M.D., Secretary

THE NEW SECRETARIAT

Once again the Michigan State Medical Society is served by a new secretariat. Since Dr. Warnshuis' departure for the sunshine and heady climate of California, Dr. Corbus has ably handled the increasing responsibilities of the office. Fortunately, this burden is now divided; it has become physically impossible for a practicing physician to carry it all and still continue to practice his art and science. The brunt of the burden will now fall upon our new Executive Secretary, Mr. William J. Burns, who is already ensconced in the new offices of the Society at 2020 Olds Tower, Lansing. It devolves upon the present writer to give what enlightenment and direction he may to that very much enlightened and able director. We trust that the tolerance due any neophytes will be accorded us and we cordially request constructive criticism and suggestions.

In return we bring a quality of enthusiasm for organized medicine and pledge our assiduous labor.

DUES INCREASED

Some years ago the dues of the Michigan State Medical Society were set at $10.00 by the House of Delegates. By a special action of the Council they were reduced in 1933 to $8.50 for reasons of economy. On November 13 the Executive Committee of the Council voted to restore the dues to the former $10.00 figure for 1936. This action was necessitated by the increased expense incidental to the increased scope of activities authorized by the House of Delegates at the Soo in September.

THE JOINT COMMITTEE ON HEALTH EDUCATION

A special meeting of the Joint Committee on Public Health Education was held at the Olds Hotel, Lansing, on November 7, 1935. Representatives present from the Michigan State Medical Society were: Dr. Burton R. Corbus, Dr. H. E. Randall, Dr. H. A. Garber, Dr. C. T. Ekelund, and Mr. W. J. Burns.

Also present were representatives Dr. R. M. Olin, from Michigan State College; Dr. B. W. Carey, Medical Director of Children's Fund of Michigan; Miss Elba L. Morse, of Michigan State Nurses' Association; Miss Marjorie Delevan, Director of Health Education, State Department of Health; Miss Connolly, Director of Health Education, Detroit City Department of Health; Miss Edna B. Montgomerie, of Department of Public Instruction; Miss Louise Knapp, from the State Organization for Public Health Nursing; Mr. Claire Gates, Field Secretary for the Joint Committee, and Dr. W. D. Henderson, Secretary of Joint Committee and Director of the Extension Division of the University of Michigan.

A special meeting of the Joint Committee had been held on the 30th of July this year to discuss ways and means for enlarging the scope and coördinating the work of various health agencies throughout the state. Mr. Claire Gates was appointed Field Secretary by the Regents of the University and has conducted a rapid survey of the many efforts for public health education. His findings were presented to a special committee composed of Doctors Bruce, Sundwall and Henderson, which special committee submitted certain recommendations which were the specific agenda for this special meeting of the Joint Committee of November 7.

In the absence of the Chairman and Vice-Chairman, Dr. Corbus presided. It was recommended that the name of the Joint Committee on Health Education be changed to the Michigan Council on Health Education, largely because it was deemed too easy to confuse the old name with the Joint Committee on Public Health Education of the Michigan State Medical Society. Chairman Corbus pointed out, however, that there is no such Committee of the Michigan State Medical Society, but that those named are

representatives of the State Society to this Joint Committee on Public Health Education. After further discussion it was decided to retain the old and well recognized name of the Joint Committee on Public Health Education. Official action was taken to provide for two regular meetings of the Joint Committee, one in the fall to formulate plans for the winter's activities, and one in the spring to evaluate the results of that program.

Four standing committees were created to which to allocate the activities embraced by the program of the Joint Committee:

1. A Committee on Scientific Program, to select health subjects of greatest social significance and need, to outline and review the content of material on these subjects and to authoritatively edit such material to be presented.

2. On Health Education in Schools, to consider and advise as to the content and practice of health education in elementary and secondary schools and colleges throughout the state.

3. On Adult Health Education, to consider "what, how and where" health educational activities should be directed.

4. On Administration, which will administer the program, keep its records and in conjunction with the Executive Committee select speakers best qualified.

5. Executive Committee, to consist of the Chairman, Vice-Chairman and Secretary of the Joint Committee, the Chairmen of the four standing committees and the Field Secretary as ex-officio member.

The Joint Committee voted to renew the policy of payment of travelling expenses for speakers and for the Executive Committee in attendance at regular meetings.

Invitations are to be extended to the following agencies to officially appoint representatives as members of the Joint Committee on Public Health Education:

1. Michigan Education Association.
2. Michigan Congress of Parents and Teachers.
3. Michigan Federated Women's Clubs.
4. Michigan Association of School Physicians.
5. Michigan Association of Sanitariums.
6. Probate Judges' Association of Michigan.
7. Michigan Public Health Association.

AFFLICTED CHILD CARE

Administration of medical care to children under the Afflicted Child Act is now a major problem facing our state government. A conference was called in the middle of October by Auditor General O'Hara and presided over by him. At this conference many Probate Judges were present, the Michigan Hospital Association was represented, former Attorney General Toy and Budget Director Thompson were there and the Executive Committee of the Michigan State Medical Society was also invited after Dr. McIntyre had requested that an invitation be extended them.

Out of that conference came the move to submit the problem to a joint committee to be made up of Probate Judges, Hospital Administrators and members of the Michigan State Medical Society. This committee met on Wednesday, October 30, at which time the medical group presented a plan embodying the following points:

1. That medical care is a basic necessity and the vendors thereof should render such service at the expense of the State, but only to children whose parents or guardians are unable to supply it.

2. Inasmuch as past administrative difficulty has arisen out of the unlimited liability of the State, the immediately obvious remedy is modification of existing rules and regulations of the Crippled Child Commission to provide two "filters," uniform throughout the state:

   (a) Economic: To limit commitments through more rigid social service investigation, under the direction of a committee in each county including the Probate Judge and representatives from the County Medical Society.

   (b) Medical: To further limit commitments by defining and excluding "procedures of election" from the provisions of the Act. A medical investigating committee was recommended similar to the one in operation during the past year in Bay City, to be given authority to accept or reject applicants on the basis of medical necessity and urgency.

3. If, as and when deficiency appropriations are voted as in the past to cover State expense under this Act, medical and hospital

bills should be given equal consideration. A special session of the Legislature was urged if funds are not allocated by the Administrative Board.

4. The 1933 Legislature had no figures upon which to base the necessary appropriation. The mounting cost has necessitated large deficiency bills, always an irksome procedure. It was recommended that a study be made to promote simplicity and more economical administration, not only in the care of crippled and afflicted children, but of afflicted adults as well. In this the Michigan State Medical Society offered its assistance and advice.

This plan was adopted by the Joint Committee and at the present time we are awaiting official action by the Crippled Children Commission on these recommendations. It is hoped that before going to press we may be able to report the action taken. In the meantime, it is stringently urged that each and every County Medical Society in the State take steps to prepare itself for the expected change in procedure for commitment of afflicted children. Specifically, it becomes the obligation of each County Society to cooperate with the Probate Judge and the Board of Supervisors to set up the necessary mechanism for adequate social service investigation and to jointly appoint a three man medical board through which all applicants for commitment must be cleared. If, as and when the necessary authorization is derived from the Crippled Children Commission, your Secretary will immediately notify all county presidents and secretaries.

The officers of your State Society and its Special Committee have bent every effort toward a solution of this perplexing problem. The fault did not lie entirely with the law nor with its administration, but very largely in the unlimited liability of the state inherent in the Act, and the Crippled Children's Society has been powerless to set up any adequate safeguards against unjustified and excessive commitments. The coöperation of the profession is necessary to provide these safeguards and the new arrangement will stand or fall directly in proportion to the quality and quantity of coöperation afforded in the various counties. In this new dispensation it will be very definitely up to the profession as to whether or not the plan succeeds.

SUMMARY OF BAY COUNTY PLAN FOR MEDICAL INVESTIGATION OF APPLICANTS FOR HOSPITALIZATION

A. Basic Principles

1. Elimination of all so-called county physicians or poor doctors.
2. Organization of a Five Man Board representing the several specialties of medicine and also representing. as far as possible, the several hospital staffs.
3. Free choice of physician and free choice of hospital by the patient.

B. Mechanism

Applicants for commitment go first to the doctor of choice. If hospitalization is found necessary by this physician, forms are made out in duplicate, which summarize the history, the physical findings, the laboratory findings, the diagnosis, the previous treatment and the reason for hospitalization or proposed treatment. These forms are taken by the patient to the appropriate social service agency which certifies to the economic indigency of the patient. Such certification having been obtained the patient next presents himself with the blanks properly filled out and thus certified to the Five Man Board for medical examination. This Board bases its approval or denial for hospitalization upon the following three points:

1. The compatibility of the lesion with the patient's life.
2. Relief of actual pain and suffering.
3. The return of the patient to employable status through the correction or elimination of some defect or disability.

If hospitalization is denied on the basis of this examination the transaction ends there. If approved, the slips are so endorsed and the patient presents himself with one copy to the hospital of his choice. The other copy is retained by the examining board for its records.

Pathological reports are rendered to the Five Man Board and made a part of the record of that patient in that office.

Emergency conditions arising at night are reported within twenty-four hours to the appropriate social service

agency and to the Five Man Board, which subsequently examines the record, including the pathological report.

This Five Man Board should be given authority to examine the hospital record and to request progress reports, or to re-examine the patient in any case it deems advisable. It should also function in the capacity of a medical advisory committee in any question of apparent excessive fee.

No such examining board should be set up locally without the coöperation of the local Medical Society, the Probate Judges and duly authorized representatives of the county Board of Supervisors. Provision should also be made for adequate record keeping, to include on each application for commitment:

(a) A copy of the request for hospitalization, which includes the findings of the attending physician.

(b) The findings of the Five Man Board.

(c) Necessary portion of the hospital record, *e.g.,* operation or treatment record, progress notes, discharge note.

(d) Pathological report.

(e) Record of fees and hospital charges paid.

From such a record various tabulations and classifications of procedures and costs may be derived.

Provision is thus made:

1. For necessary hospital and medical care to all duly certified indigents.

2. Against uncontrolled and unlimited commitment.

THAT TYPOGRAPHIC ERROR

The typographic error is a slippery thing and sly,
You can hunt until you're dizzy, but it somehow will get by,
Till the forms are off the presses it is strange how still it keeps;
It shrinks down in a corner and it never stirs or peeps,
That typographic error, much too small for human eyes,
Till the ink is on the paper, when it grows to mountain size.
The boss, he stares with horror, then he grabs his hair and groans;
The copy reader drops his head upon his hands and moans—
The remainder of the issue may be clean as clean can be,
But that typographic error is the only thing you see.

—*The Rainbow.*

COUNCIL AND COMMITTEE MEETINGS

The Council—Sunday, September 22, 1935, Country Club, Sault Ste. Marie.

The Council—Tuesday, September 24, 1935, Ojibway Hotel, Sault Ste. Marie.

Executive Committee of The Council—Wednesday, October 9, 1935, Statler Hotel, Detroit.

Executive Committee of The Council—Friday, October 18, 1935, Olds Hotel, Lansing.

Special Committee on Crippled-Afflicted Child Laws—Friday, October 25, 1935, Elks Club, Flint.

Cancer Committee—Friday, November 1, 1935, Olds Hotel, Lansing.

Representatives on Joint Committee Public Health Education—Thursday, November 7, 1935, Olds Hotel. Lansing.

Legislative Committee—Thursday, November 7, 1935, Wayne County Medical Society Building, Detroit.

Public Relations Committee—Wednesday, November 13, 1935, Statler Hotel, Detroit.

Executive Committee of The Council—Wednesday, November 13, 1935, Statler Hotel, Detroit.

Economics Committee—Wednesday, November 20, 1935, Board Room, Olds Tower, Lansing.

Contact Committee with Crippled Children Commission—Wednesday and Thursday, November 20-21, 1935, Olds Hotel, Lansing.

Legislative Committee—Wednesday, December 4, 1935, Wayne County Medical Society Building, Detroit.

Joint Meeting of Executive Committee of The Council, and Crippled Children Commission—Wednesday, December 11, 1935, Statler Hotel, Detroit.

MINUTES OF THE MEETING OF THE PUBLIC RELATIONS COMMITTEE

Wednesday, November 13, 1935
Statler Hotel, Detroit

1. The meeting was called to order by Dr. L. F. Foster, Chairman, at 3:56 p. m. in the Woodward Room of the Statler Hotel, Detroit. Present were—Drs. L. F. Foster, F. B. Miner, Philip A. Riley, A. B. Wenger, A. H. Whittaker; also present: President Grover C. Penberthy, Chairman of Council Henry Cook, Secretary C. T. Ekelund, Editor James H. Dempster, Drs. H. A. Luce, J. M. Robb, and Executive Secretary Wm. J. Burns.

2. Dr. Foster brought up discussion of definite plans and details for integrating throughout the State various programs of the Michigan State Medical Society. He presented a diagram showing the functions of his Committee and of each Councilor. General discussion by all members of the Committee. Dr. Foster suggested this Committee could pass on the plans and activities of Bay, Jackson and other counties to the rest of the State for emulation. All discussants were of the opinion that this Committee could integrate all sociologic plans and other programs of the Michigan State Medical Society throughout the State, and keep in close touch with the Executive office so that follow-up work could be done.

It was recommended that a letter containing the purpose, plans and work of this Committee be sent to each Councilor and to each county medical society in the State, giving details and plan of action, by description and diagram.

The organization of this Committee as diagramed by Dr. Foster was adopted as a tentative plan of operation, on motion of Dr. Miner, seconded by Drs. Riley and Whittaker, and carried unanimously.

Motion of Drs. Whittaker-Riley that the Public Relations Committee respectfully recommend to the Executive Committee of The Council that the seventeen Councilors be instructed to call Councilor Dis-

trict meetings, with representatives of the Public Relations Committee, to effect organizational work in their districts. Carried unanimously.

3. Regarding the integration of two "filter" systems in every county to aid efficient administration of the Crippled-Afflicted Child Laws: Dr. Penberthy read the Michigan State Medical Society statement presented to the Finance Committee of the State Administrative Board on October 30, 1935, and also the final agreement reached between (a) Probate Judge Association, the Michigan State Medical Society, the Michigan Hospital Association; and (b) the Finance Committee. Discussion by Dr. Cook: "We are now ready to integrate the plan throughout the State, and the Public Relations Committee can set up the organization." The Committee voted to refer this to each Councilor to take up at his Councilor District Meeting.

4. The Chair thanked all for their attendance, advice and proffers of future assistance, and adjourned the meeting at 6:05 p. m.

MINUTES OF THE MEETING OF THE EXECUTIVE COMMITTEE OF THE COUNCIL

Wednesday, November 13, 1935
Statler Hotel, Detroit

1. The Executive Committee of The Council of the Michigan State Medical Society convened in the Woodward Room, Statler Hotel, Detroit, at 7:05 p. m. Dr. Henry Cook, Chairman, called the meeting to order.

Present: Councilors Henry Cook, A. S. Brunk, H. R. Carstens, T. F. Heavenrich, and Frank E. Reeder. Also present were President Grover C. Penberthy, Secretary C. T. Ekelund, Editor James H. Dempster, Dr. L. F. Foster, Chairman of the Public Relations Committee, and other members of his Committee, Dr. Philip Riley, A. V. Wenger and A. H. Whittaker. Also Dr. H. B. Fenech, of the Crippled Children Commission; Drs. Frank Purcell and Frank Curtis of the Orthopedic Society, and Dr. E. R. Witwer of the X-ray Society, and Executive Secretary Wm. J. Burns.

Absent: Dr. C. E. Boys (excused).

2. The minutes of the meetings of October 9 and October 18 were approved as printed, on motion of Drs. Brunk-Carstens. Carried.

3. Unfinished Business:

(a) Dr. Penberthy reported on progress of arrangements for the 1936 Annual Meeting in Detroit, stating that invitations have been received from four prospective exhibit halls, each wishing to become the headquarters. No date could be decided until the dates of the annual meetings of certain national medical organizations could be ascertained. The Chair requested Dr. Ekelund and Mr. Burns to coöperate with Dr. Penberthy in planning all matters for the Annual Meeting.

(b) Secretary Ekelund reported on the membership and financial condition of the Society, which report was adopted, on motion of Heavenrich-Reeder and carried.

(c) With regard to dues for 1936: The Executive Committee gave much consideration to this question. Due to the added activities which the House of Delegates ordered the Michigan State Medical Society to undertake, the budget for 1936 will have to be revised upwards to meet the extra necessary expense. The Executive Committee of The Council was forced to forego its recent discount on annual dues and to reëstablish the sum of ten dollars per member set by the House of Delegates.

(d) Dr. Carstens as Chairman of the Finance Committee discussed the budget for 1936, and was requested to present same to The Council at its January meeting. He presented the report of Ernst & Ernst on the financial condition of the State Society as of October 25, 1935. Motion of Drs. Carstens-Reeder that said report be filed. Carried.

(e) No report had been received from Attorney Barbour relative to the status of litigation regarding practice of medicine by osteopaths. A letter from Dr. T. Y. Ho of Clinton County asking about consultations with osteopaths was read; it was the sense of the Executive Committee that this matter was adequately covered in a letter sent by Dr. B. R. Corbus to Dr. Ho.

(f) Report from the special committee (Drs. Cook, McIntyre and Penberthy) on contact with the Finance Committee of State Administrative Board in re medical care of crippled-afflicted children was presented by Dr. Cook. The Michigan State Medical Society's statement and the final agreement were presented, followed by general discussion. Motion of Drs. Carstens-Heavenrich that the Executive Committee record its approval of the action of the Special Committee and of its resolution, and that it proceed with the execution of the indicated steps and the proper dissemination of the facts. Carried unanimously.

Motion of Drs. Carstens-Heavenrich that this matter be referred to the Public Relations Committee of the Michigan State Medical Society to initiate all machinery, with the aid of the Councilors, to work out the practical details. Carried unanimously.

The representatives of the Michigan Orthopedic Society and of the Michigan Roentgen Ray Society felt that all these presentations to State officials should be made by the Michigan State Medical Society as a unified group. It was suggested that at the next meeting of the Crippled Children Commission, November 20 and 21, the Commission be informed that the State Society's filtration system is being organized and that the Society is ready to coöperate in all activity.

Secretary Ekelund spoke for a comprehensive survey of the costs and administration of the Crippled-Afflicted Child Laws for the last three years. The Executive Committee instructed that the President and Secretary contact the Committee on Economics of the Michigan State Medical Society regarding the advisability of studies of cost and administration of these Laws, as well as the SERA. With regard to the latter, Secretary Ekelund's written recommendations were referred to the Economics Committee.

4. The Public Relations Committee presented its plan of operation, through Chairman L. F. Foster, who explained the Committee's integration plan according to a diagram recommended by the Committee. The Public Relations Committee motion, adopted November 13, 1935, was read: "The Public Relations Committee respectfully recommends to the Executive Committee of the Council that the seventeen Councilors be instructed to call Councilor District meetings, with representatives of the Public Relations Committee, to effect organizational work in their districts." Full discussion. Motion of Drs. Heavenrich-Carstens that the Executive Committee adopt the program of the Public Relations Committee and instruct that such meetings be called. Carried unanimously. The Chair thanked the Public Relations Committee for its well considered plan and for attendance at this meeting. Dr. Whittaker spoke about the absolute necessity of informing the people concerning the good work the medical profession is doing. The members of the Public Relations Committee retired.

5. Secretary Ekelund outlined tentative plans for the 1936 Secretaries Conference: a full day session in Lansing, ending with a social function so that each secretary may become acquainted with all others. The program will include presentation of programs and plans successful in the various counties, for emulation by other counties. The time to be Sun-

day, January 26, 1936. The Executive Committee approved this general outline and instructed Dr. Ekelund to proceed with details.

6. Chairman Cook announced Committees of the Council:

(a) Publicity—Drs. A. S. Brunk, Chairman, H. H. Cummings, J. E. McIntyre.

(b) Finance—Drs. H. R. Carstens, Chairman, H. A. MacMullen and W. A. Manthei.

(c) County Societies—Drs. C. E. Boys, Chairman, V. H. Van Leuven and V. M. Moore.

7. (a) The Secretary reported that the unexpired portion of Dr. Corbus' Fidelity Bond had been assigned to him in the sum of $10,000. Motion of Drs. Carstens-Brunk that the Executive Secretary and his assistant be bonded for $5,000 each. Carried.

8. A request from Dr. Fred B. Minor for financial aid in the Survey of the Goitre Committee was referred to the Chairman of the Finance Committee, who was requested to make a report on same at the next meeting of the Executive Committee.

9. Regarding the recommendation that all Committees hold early meetings to work out the year's program for submission to the Executive Committee and the President: the Executive Secretary was instructed to write all Committee Chairmen who had held no meetings thus far, requesting that they outline their year's programs.

10. The question as to whether the SERA had been officially notified of action of the Michigan State Medical Society House of Delegates on the SERA survey of relief medicine in 10 counties in Michigan, was referred to the Committee on Economics, which shall report its proposed action to the Chairman of the Executive Committee.

11. The Executive Secretary brought up the provisions relating to health in the Social Security Act. After full discussion, motion was made by Drs. Carstens-Brunk that this matter be referred to the Preventive Medicine Committee for study and report at the next meeting of the Executive Committee. Carried unanimously. It was felt that the U. S. Public Health Service be invited to send a representative to meet with the Michigan State Medical Society for a full explanation of this legislation and impending activity.

12. Dr. John A. Wessinger of Ann Arbor was recommended to Affiliate Membership in the American Medical Association by election of the Executive Committee, motion of Drs. Heavenrich-Carstens and carried.

The meeting was adjourned at 11:50 p. m.

MINUTES OF MEETING OF LEGISLATIVE COMMITTEE

Detroit, November 7, 1935

1. The meeting was called to order by Dr. H. H. Cummings, Chairman, at 7:15 p. m. in the Wayne County Medical Society Building. Those present were: Drs. Cummings, F. B. Burke, L. G. Christian, Henry Cook, L. J. Gariepy, H. E. Perry and C. F. Snapp. Also present were President Grover C. Penberthy; the Editor, Dr. James H. Dempster, and Executive Secretary, Wm. J. Burns.

2. The chairman reviewed the work of last year's Legislative Committee, and called upon all present for informal discussion of the agenda at hand. Plans for the study of important health legislation were drawn up.

Motion of Drs. Gariepy-Cook that a plan be presented to the Executive Committee of The Council on November 13, 1935, whereby each Councilor shall coöperate with the Public Relations Committee or some designated committee in each county in effecting organizational work in the district. Carried unanimously.

3. Motion of Drs. Gariepy-Snapp that this Committee request the Secretary of the State Society to insert in his December Letter a request that each county medical society send in its ideas and advice on organizational matters to the Legislative Committee. Carried unanimously.

4. The Chair appointed the following Sub-Committees:

(a) To study model bill for efficient administration of afflicted and crippled persons' laws—Drs. Gariepy, Christian and Cook.

(b) To study professional qualifications bill—Drs. Snapp and Gariepy.

(c) To study problem of unauthorized practice of medicine—Drs. Burke and Gariepy.

(d) To study integration of medicine—Drs. Burke and Perry. The Chair requested Mr. Burns to aid this Sub-Committee with the legal phases of the question.

(e) Contact Committee—Drs. Penberthy, Perry, Cook and Christian.

Dr. Cook suggested that the confidence of all is forthcoming when we show that our motive is protection of the public and our actions are always to make for better medical care of the people.

5. A letter from the Secretary of the WCMS Policy Committee was read asking "What constitutes from the legal point of view medical practice in the State of Michigan?" Motion of Drs. Christian-Cook that the Michigan State Board of Registration in Medicine be requested to ask the Attorney General for an opinion on this matter, and to refer it to the Wayne County Medical Society. Carried unanimously.

6. The meeting was adjourned at 9:45 p. m. The Chair announced that the next meeting would be held December 4, and thanked all members for their attendance and advice at this session.

MINUTES OF MEETING OF THE CANCER COMMITTEE

Friday, November 1, 1935
Olds Hotel, Lansing, Michigan

All the members of the Cancer Committee were present together with the following members of the sub-committee: Drs. Chas. E. Boys, Kalamazoo; Claude V. Russell, Lansing; Arthur Kretchmar, Flint; Leland E. Holly, Muskegon. In addition to those present, Dr. J. T. Sample of Saginaw and R. L. Mustard of Battle Creek have accepted appointments to the sub-committee.

The following guests were present: Dr. H. W. Yates, Detroit, representing the American Society for the Control of Cancer; Dr. J. H. Dempster, Editor of the JOURNAL; and Clare Gates, Ann Arbor, Field Secretary of the Joint Committee on Public Health Education.

The order of business was as follows:

1. *Duties of the Sub-Committee*

The purpose of appointing the sub-committee was to have men in certain strategic points throughout Michigan for the purpose of carrying on lay cancer education along the lines established by Dr. H. J. VandenBerg in and about Grand Rapids. All members of the sub-committee expressed willingness to undertake this work. Dr. VandenBerg agreed to present the lantern slides used by him, together with an outline of the talk which he has been using, at the next committee meeting to be held in about one month. It is the wish of the committee that six duplicate sets of Dr. VandenBerg's slides be prepared for the sub-committee and it was suggested that the unexpended balance of about $120 of the appropriation voted for newspaper publicity be used to defray the expense involved. It is the desire of the Committee that additional sub-committee members be appointed to represent portions of the State not now represented. Mr. Gates offered the services of the Joint Committee in arranging speaking pro-

grams in schools, clubs, societies, etc., for the members of the committee.

2. *Newspaper Publicity*

Dr. Weller rendered a report setting forth that the twenty-six newspaper articles had been released and that this part of the committee's program was complete. Dr. Slemons promised that at the next committee meeting he would be prepared to give a clipping bureau report to show to what extent these articles had been used by the 470 state newspapers that had received them. Dr. Weller's financial report showed that an unexpended balance of about $120 remained in this account and, as has been previously stated, it is the desire of the committee to use this amount for preparation of lantern slides. A few months ago the *Detroit News* agreed to run a series of five consecutive daily articles of about one column length sometime this fall and Dr. Brines agreed to contact the editor during the next week.

In connection with the newspaper articles it was the expressed desire of the sub-committee members that they receive copies of these articles to follow in their cancer talks. No copies are available and Dr. Evans suggested that it might be possible for the Detroit Health Department to undertake the preparation of some extra copies. A discussion arose then as to the advisability of preparing a large number of these copies to distribute to the laity, particularly to the audiences to which cancer talks were given. This matter has been taken under consideration and the matter of expense is now being investigated.

3. *Educational Campaign Within the Profession*

The report of the cancer survey made in the last few months by Dr. F. L. Rector, representative of the American Society for the Control of Cancer, is to be published serially in the next few issues of the JOURNAL. Dr. Dempster also kindly agreed to publish a series of six articles of about three columns each to contain cancer information directed to the profession. It was decided that at the next meeting of the Cancer Committee, when all the members have had an opportunity to familiarize themselves with the survey report, a recommendation should be read in order that the Committee could take such action as was deemed advisable.

Respectfully submitted,
O. A. BRINES, M.D., *Chairman.*

Convalescent Scarlet Fever Serum: Its Prophylactic and Therapeutic Value

Archibald L. Hoyne, Sidney O. Levinson and William Thalhimer, Chicago (*Journal A. M. A.*, Sept. 7, 1935), found that of 862 home contacts who gave no history of scarlet fever and were passively immunized with convalescent scarlet fever serum, scarlet fever did not develop in 97.2 per cent. Of eighty-three Dick-positive hospital contacts immunized with convalescent scarlet fever serum, scarlet fever did not develop in 95 per cent. In immunized contacts in whom scarlet fever developed, it was usually in a modified form, believed to have been produced by partial immunization and resultant sero-attenuation. Convalescent fever serum in adequate therapeutic doses administered early may abort the disease and usually causes recession of fever, diminution of toxemia and angina, and fading of the rash and appreciably shortens the period of illness. Convalescent scarlet fever serum, directly or indirectly, either prevented the development of complications or reduced the frequency of their occurrence. The influence of serum on late and complicated cases was less marked but frequently seemed beneficial. By reducing the severity of the disease and the incidence of complications, the mortality rate was definitely diminished. No unfavorable reactions, serum sickness, sensitization or anaphylactic shock were encountered with the use of human serum.

COUNTY SOCIETIES

ST. CLAIR COUNTY

Saint Clair County Medical Society held its first meeting of the autumn on Tuesday, October 1, 1935, at the Harrington Hotel, Port Huron, Michigan; sixteen members were present. The Society listened to reports from Dr. T. F. Heavenrich, Councillor of the Seventh District, and from Dr. A. L. Callery, Delegate to the State Society, with regard to the Soo meeting and what transpired there. Dr. D. W. Patterson made a committee report with regard to the working of the County Emergency Welfare Medical Relief. Doctor Waters, president of the Society, reported the free medical examination of about three hundred and fifty kindergarten pupils by six members of the Society in coöperation with the School Moard. A motion was adopted to the effect that members of the Society perform free physical examination of 1100 to 1300 pupils of the public schools of Port Huron to discover defects likely to result in accidents or injuries while engaged in work in the gymnasium.

On Tuesday, October 15, 1935, the Society met as usual at the Harrington Hotel, Port Huron, Mich. Seventeen members were present. Dr. C. C. Slemons addressed the Society on "The Full Time County Health Unit." After the address a round table discussion was held and upon the adoption of a resolution to the effect, the president appointed a committee of four to gather data and make a study of the plan for the Society.

On Tuesday, November 5, 1935, a meeting was held at the usual place of meeting with twenty-four members and two guests, Drs. W. D. Lane of Romeo and H. H. Learmont of Croswell, present. Dr. W. J. Cassidy of Detroit talked on the subject "Ectopic Pregnancy." The speaker presented his subject in a fine informal manner and at its conclusion a full discussion took place.

A regular meeting of Saint Clair County Medical Society was held at the Harrington Hotel, Port Huron, Michigan, Tuesday, November 19, 1935. Nineteen members and three guests were present.

Dr. Dixon, Superintendent of the Michigan Home and Training School at Lapeer, addressed the Society on the general subject of Epilepsy. To nearly all of those present the remarks of Dr. Dixon were along lines entirely new and represented the most recent theories with regard to the condition. Dr. Dixon stated that he would prefer to limit the term "epilepsy" to the small number of cases for which no organic or functional basis could be discovered. His ideas with regard to the presence of a "convulsive center" in the brain as well as the idea of a "lowered convulsive threshold" struck his audience as entirely logical. The discovery of "pre-epileptic children" by a corps of trained psychologists working in our schools just as do physical educationists, as suggested by Dr. Dixon, will be the next step in the prevention, in some cases, of adult epilepsy. A full discussion by many of those present followed the remarks of Dr. Dixon and the Society rendered a vote of thanks to the speaker for his presentation of the subject.

At the conclusion of the scientific program the Society went into executive business session.

GEORGE M. KESL, *Secretary-Treasurer.*

WOMAN'S AUXILIARY

MRS. A. M. GIDDINGS, President, 22 Riverview Ave., Battle Creek
MRS. KENNETH LOWE, Secretary-Treasurer, 107 Elizabeth St., Battle Creek

To County Presidents and Members:

Greetings!

Our new year in auxiliary work is well on its way, with twelve active county units enrolled. Some of these units include more than one county, so a larger part of the state is organized than appears on the surface. The state organization work has a different set-up this year than heretofore. The vice president of the auxiliary is now chairman of the organization committee, and has three or four members from different parts of the state as assistants. We are hopeful that during this year more county units will be brought into the organization, so that a healthy growth may be recorded at the annual national convention.

Our standing committees are all in the hands of capable chairmen—some new this year, and some who have served before. A list of these will be found in this number of the JOURNAL. Every chairman is anxious to be in active contact with the member having charge of her particular work in each county, and she will be glad to answer questions or give suggestions in her line of activity at any time.

It is a recognized fact that each county has its own local problems of interest to our organization, and the importance of these local demands must not be minimized. However, we must keep in mind that these activities can be undertaken only under the direction, or at least with the approval, of the Medical Society. So, it is necessary that there be close coöperation with the officers of the local Medical Society.

Besides these local projects there is the National program to be carried out. Our state organization is important in that it is the contact point between the national and the local associations; and acts as an agent in the unification of effort which has immense potential, as well as actual, value. A thing is greater than any of its parts, and the efficacy of our national organization depends on the power of its divisions—state and county.

One of the main objectives of the society as a whole is the promotion of a sane idea regarding health and medical matters; and it is through the sale of *Hygeia* subscriptions that we feel that this can best be accomplished. I have read letters from rural school teachers expressing the hope that *Hygeia* would be available another year for their use, as it had proved of so much benefit, and had been so profitable a source of material along different lines of the school program. Dr. Gorsline pointed out, in his talk before our convention at Sault Ste. Marie, that we cannot measure the importance of instilling in our boys and girls a proper attitude toward health problems and the medical profession. We have much of quackery and misunderstanding to combat, and *Hygeia* is our valuable instrument. The *Hygeia* program should really be begun in the spring of the year, so that, with the opening of schools in September, the subscriptions would all be taken care of; and *every* schoolroom, especially in rural communities, would have the magazine included in its equipment.

Just a word about the work of the Press and Publicity department. It is my desire that the pages allotted to us in the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY be utilized to the fullest extent; to promote interest in our organization, and to serve as a means of communication between the state and county units. It will save much correspondence if it does so serve. I would like to have the monthly letters from your president, as published, read at the local meetings. Different departments of the work will be emphasized in the succeeding months.

The Press chairman is eager to have material suitable for presentation in these pages forwarded to her. Let us emphasize this matter to the extent that every member, every month, will look forward with pleasant anticipation to receiving and reading the State Journal. Ask your husband to have the address changed if he cannot remember to bring the current number home to you.

Looking forward to a pleasant and profitable year, I am

Sincerely yours,
(Mrs. A. M.) LEAH M. GIDDINGS, *President.*

* * *

Standing committee chairmen appointed by Mrs. Giddings, president of the Woman's Auxiliary to the Michigan State Medical Society:

Program—Mrs. G. C. Hicks, 1009 Wildwood Ave., Jackson.
Public Relations—Mrs. Ledru O. Geib, 1411 Berkshire Rd., Detroit.
Press and Publicity—Mrs. L. C. Harvie, 341 Brockway Place, Saginaw.
Organization—Mrs. J. A. McLandress, 715 Court St., Saginaw.
Legislation—Mrs. L. G. Christian, 606 Townsend St., Lansing.
Revision—Mrs. J. H. Dempster, 5761 Stanton Ave., Detroit
Hygeia—Mrs. Carl Snapp, 980 Plymouth Rd. S. E., Grand Rapids.
Historian—Mrs. J. Earl McIntyre, 600 Grand Ave. S., Lansing.

* * *

To All County Presidents: Please see that a complete list of officers and committee chairmen is sent to the State President at once. We wish these for publication in the January issue of the JOURNAL.

* * *

The following Resolutions on the death of Dr. Caroline Bartlett Crane were adopted at the state meeting held at Sault Ste. Marie in September:

"We, the Woman's Auxiliary to the Michigan State Medical Society, submit to the all-wise Providence in the final summons of our valued Honorary President and organizer, Dr. Caroline Bartlett Crane, and,

WHEREAS, we too have suffered the never to be regained loss of her wise counsel and guidance, therefore be it

RESOLVED that we deplore the loss of Dr. Caroline Bartlett Crane with deep feelings of regret softened only by the confident hope that her spirit is carried on in all the worthy causes in which she was interested, and be it further

RESOLVED that our sincere condolence and our earnest sympathy be extended to Dr. A. W. Crane and family, and that a copy of this resolution be sent to the Michigan State Medical JOURNAL and one be spread upon the records of our Auxiliary.

ETHEL F. BENNETT
CHARLOTTE E. ANDREWS
WILMA G. DOYLE

* * *

County News

Eaton County.—The Eaton County Auxiliary reports two very enjoyable and enthusiastic meetings this Fall. The first was held on September 19, when twelve members dined at the Charlotte Cafe, Charlotte. Following the dinner the members met at the home of Mrs. J. W. Davis, where a social hour was enjoyed after a short business meeting conducted by the new president, Mrs. Thos. Wilensky.

Mrs. J. W. Davis was again hostess to the Eaton County Auxiliary on October 24, when twelve mem-

bers met for a pot-luck dinner. Mrs. Wilensky reported on the recent convention of the Michigan Federation of Women's Clubs, which was held in Ann Arbor. Mrs. C. D. Huber discussed current events and Mr. Nielsen, of the Nielsen Studio, in Charlotte, presented and explained the moving pictures taken by himself during the summer when he and Mrs. Nielsen enjoyed an extensive trip abroad.

Kalamazoo County.—The Woman's Auxiliary to the Kalamazoo Academy of Medicine opened its year's activities with a coöperative dinner, October 21, at the home of Mrs. Ralph Shook. Covers were placed for thirty-three members.

A report of the State Auxiliary convention held in September at Sault Ste. Marie, Michigan, was given by the delegate, Mrs. C. L. Bennett, at the business meeting which followed the dinner. Committee chairmen for the year are as follows:

Program.....Mrs. Rush McNair
Legislative.....Mrs. S. E. Shackleton
Hygeia.....Mrs. S. E. Andrews
Calling.....Mrs. H. A. Rigterink
Press.....Mrs. F. M. Doyle
Membership.....Mrs. John R. MacGregor
Public Relations.....Mrs. Walter Den Bleyker

The *resolutions* passed by the Board of Education in appreciation of our purchase of the Fairchild Hearing Aid follow:

"The Board of Education acknowledged with deep appreciation the generous interest of the wives of the members of the Kalamazoo Academy of Medicine and of the Child Conservation Circle in the work and activity of the Hard of Hearing room in the Kalamazoo Public Schools manifested so liberally by the contribution that has made possible the purchase of a device for instructional and hearing purposes. In expressing its gratitude the Board wishes the donors to know that their interest, liberality and thoughtfulness, their concern of those less fortunate and their endorsement of the special education program of the public schools is both gratifying and reassuring. In accepting the gift, the Board pledges its efforts in the further advancement of the rehabilitation of the handicapped child."

Oakland County.—On Friday, September 27, eighteen members of the Oakland County Auxiliary met for luncheon at the Pontiac General Hospital. Mrs. Frank Gerls, president, named the following committee chairmen:

Social.....Mrs. L. G. Rowley
Program.....Mrs. Vernon C. Abbott
Legislative.....Mrs. Harry B. Yoh
Membership.....Mrs. Leon F. Cobb
Notification.....Mrs. A. V. Murtha
Publicity.....Mrs. E. V. Howlett
Hygeia.....Mrs. T. W. K. Hume
Sympathy.....Mrs. R. G. Tuck

The afternoon was spent in preparing dressings for the hospital.

Mrs. Robert H. Baker, 57 Cherokee Road, Pontiac, was a gracious hostess to the Oakland County Auxiliary at a coöperative luncheon. Twenty-four members attended. During the afternoon towels were hemmed for the Pontiac General Hospital.

Mrs. Guy L. Kiefer, of Lansing, Honorary State President and past State Chairman of Organization, was present and spoke on the many different phases of the work as she had found them in the various localities, making interesting suggestions for future work.

Mrs. Harry B. Weinburgh, president of the Ingham Auxiliary, also addressed the ladies, telling them of the interests of her group.

Saginaw County.—Dr. and Mrs. Arthur E. Leitch were hosts to more than eighty-five members of the Saginaw County Medical Society and its Woman's Auxiliary at a delightful social hour following the business meetings of the two organizations Tuesday evening, October 29.

Members of the Medical Society held their meeting at the Shrine Temple and later joined their wives, who had held their regular monthly meeting at the Leitch home.

Miss Josephine Ainsworth, general secretary of the Y.W.C.A., addressed the Auxiliary on "The Health Program at the 'Y'." She explained the various health education classes and examinations and discussed the programs worked out to fit the needs of all groups. She also told of the consultation service, which helps to analyze various situations which arise among the girls.

Mrs. Robert Jaenichen reported on the state convention recently held at the "Soo."

An attractive arrangement of yellow and rust chrysanthemums in a crystal bowl and yellow tapers in crystal holders centered the table at which refreshments were served during the social hour. Mrs. William J. O'Reilly and Mrs. Ralph S. Jiroch poured. House prizes were drawn by Dr. H. M. Bishop and Mrs. Stuart Yntema.

Wayne County

A regular meeting of the Woman's Auxiliary to the Wayne County Medical Society was held November 8, at Eloise Hospital, where members were the guests of Mrs. Thomas K. Gruber, wife of the superintendent, who was assisted by Mrs. Leslie T. Henderson, Mrs. Warren L. Hulse, Mrs. Herman F. Albrecht and Mrs. V. P. Johnson.

After a delicious complimentary luncheon, a short business session was held, during which Dr. Gruber, superintendent of the hospital and president-elect of the Wayne County Medical Society, discussed Eloise in its various phases. The members and guests were then conducted on a tour of the buildings and all were deeply impressed by the care and cleanliness existing in an institution which comprises more than 8,000 inmates.

One of the most worthwhile undertakings of the Woman's Medical Auxiliary is the annual series of free lectures arranged by Mrs. J. Milton Robb and Mrs. Arthur B. McGraw, which have popular appeal and are open to the public.

"Men, Medicine and Mankind" is the theme for this year and the series most auspiciously opened November 18, with a talk by Mr. Malcolm Bingay, managing editor of the *Detroit Free Press* and an honorary member of the Wayne County Medical Society. He discussed "Sir Ronald Ross and Malaria," describing a personal interview he had in England with this unsung hero. It was interesting to note that several doctors also were attracted to this meeting, thus necessarily being absent from a regular meeting of their own society.

On December 16, Dr. Charles Godwin Jennings has as his subject, "William Budd and Typhoid Fever," to be followed in January by Dr. Harold Mack on "Oliver Wendell Holmes, M.D., and Puerperal Fever."

(MRS. MILTON A.) WINOGENE E. DARLING,
Press Chairman.

OBITUARY

J. W. Cunningham, M.D.

Dr. Cunningham passed away September 1, 1935, at St. Mary's Hospital, Detroit, after an illness of two months. He was born in Aldborough, Ontario, June 14, 1880, and came to Detroit when he was seventeen, and received his M.D. degree from the Detroit College of Medicine at the age of twenty-one. Folloing his internship at St. Mar's Hospital, he practiced for three years in Sault Ste. Marie before returning to Detroit. He practiced in this city twenty-nine years.

He was a member of the Executive Board of St. Mary's Hospital, a Fellow of the American Medical Association, a member of the Michigan State Medical Society and the Wayne County Medical Society.

Dr. Cunningham is survived by his widow, Margaret Gertrude Holihan Cunningham; a son, James W., Jr.; and a daughter, Maureen.

George Gesner, M.D.

Dr. George Gesner of Marshall, Michigan, died suddenly at his home on October 27, after making a professional call. Dr. Gesner was a native of Ontario, having received his preliminary education at Ridgetown High School. He came to Detroit where he pursued a course in medicine at the Detroit College of Medicine. Dr. Gesner was a much esteemed citizen of Marshall, where he took an active part in civic affairs. He was a member of the Board of Education, also a member of the Calhoun County, Michigan State, and American Medical Association.

Christopher G. Lehman, M.D.

Dr. Lehman died September 27, 1935, following a short illness. He was born January 12, 1872, and attended the German and public schools, Brown's Business University and Adrian College at Adrian. He then spent four years at the Michigan College of Medicine and Surgery in Detroit and was graduated in 1901. Later Dr. Lehmann took a post-graduate course at Rush Medical College in Chicago. He practiced several years in Palmyra, Michigan, before coming to Detroit, where he was in practice for thirty years.

He is survived by his widow, Louise, and four daughters, Mrs. Gladys Bumpus, Ruth, Evelyn and Bertine.

Cornelius Van Zwaluwenburg, M.D.

Anno 1885 upon his graduation from the medical department of the University of Michigan in his twenty-third year, Doctor Van Zwaluwenburg began the practice of medicine in the city of Kalamazoo.

As a student he had a high record. One day in his freshman year he wandered into the amphitheatre in the hour of the professor of clinical surgery and the seniors. The professor asked the name of an anatomical structure in the ankle. None could answer. "You tell them," said the professor, pointing at Van Zwaluwenburg. And Van Zwaluwenburg did as asked.

In the fifteen years of Doctor Van Zwaluwenburg's practice in Kalamazoo the world witnessed a greater advance in medicine and surgery than in all the preceding century. Van Swaluwenburg realized this and determined that by merit he would march with the front ranks.

He was equally einterested in medicine and surgery. His operative technic was neat and sure and masterly. He was the first Kalamazoo surgeon to successfully resect the cecum, the gastric pylorus and the superior maxilla.

He served the Kalamazoo Academy of Medicine in all its official activities. He was one of the founders of the hospital now known as the Bronson Methodist.

Van Zwaluwenburg was always questioning medical theories, old and new. He accepted none until he had found the proof.

In January, 1900, he moved to California where he was soon recognized as one of the ablest of the profession in the state.

The same kind clairvoyant Providence that sent blindness to Milton, Bunyan to prison and deafness to Edison, sent Van Zwaluwenburg to bed by disease and accident for two long times. There through the long lone days and the longer lonesome night, Van Zwaluwenburg "sought out and set in order" the solution of many of the problems that had troubled him through all the years of his professional services.

I will mention but two; in 1931 he published "Hydraulic Vicious Circles as Develops in Acute Appendicitis." Thus answering his own question of forty years "what causes death in appendicitis?"

Then he announced the cause, cure and prevention of death in "Heat Stroke" and "Sun Stroke." Can anyone compute the lives thus to be saved in the steel mills of the Garys and Ruhrs, the Death Valleys and Saharas the world over.

Doctor Van Zwaluwenburg died July 23, 1935. "Bold, cautious, true, and my loving comrade."

RUSH MCNAIR in the *Bulletin of the Kalamazoo Academy of Medicine.*

Dr. McNair writes us:

"Dr. Cornelius Van Zwaluwenburg was one of three brothers distinguished in Michigan Medicine. One brother, until his death a few years ago, was at the head of the X-ray Department, University of Michigan.

CORRESPONDENCE

A NEW METHOD OF RESUSCITATION FROM DEEP ANESTHESIA (COLLAPSE)

EDITOR JOURNAL MICHIGAN STATE MEDICAL SOCIETY:

In reviewing the subject of resuscitation of patients who have collapsed from deep anesthesia, I find there are many remedies, nearly all of which are useless when one is confronted with a real emergency. When breathing has completely ceased, not from holding the breath, but by loss of power to breathe, we welcome anything which will be of real service. The pulmotor, if present, is generally useless because it pumps air into the stomach instead of into the lungs. Hypodermics of the various remedies practically always are useless because the patient cannot live long enough without oxygen, for those remedies to act. Carbon dioxide and oxygen are for the patient who is still breathing. The purpose of this paper is not to discuss that type of patient but one who has ceased to breathe. Dilating the rectum is useless, because if a real emergency exists the rectum is already dilated.

In order to select a remedy, we must consider the cause. When a general relaxation takes place as the result of too deep anesthesia, the trachea and lungs collapse. The muscles of respiration can cope no

longer with the atmospheric pressure. This we must counteract and do so quickly if we are to save the patient. If the heart is still beating, there is still hope.

Two like cases came under my observation recently. One, a boy seven years old, was given ether for the removal of piece of a needle from his arm, when he suddenly collapsed. The breathing ceased. The rectum automatically dilated. The pupils were dilated. Artificial respiration was resorted to, but to no avail. We had seemingly done everything possible when it suddenly occurred to me, I could and must get air into his lungs somehow. While my assistant continued to hold out the tongue, I seized a metal male catheter, and inserted it into the trachea, using my finger as a guide. The lungs filled to capacity. The atmospheric pressure was overcome just as suddenly as it had become the master. Instantly there was regular breathing. The patient was out of danger.

There is a time when the lungs and trachea have collapsed that the atmospheric pressure is the greatest hindrance to recovery. If this can be overcome before the heart ceases to beat the patient will recover. The curve of the catheter is so shaped as to pass easily. One should always have one convenient when giving anesthetics.

No person should give anesthetics unless capable of passing this instrument into the trachea if need be.

HUGH HARRISON.

Detroit, November 18, 1935.

R. B. SMITH MEMORIAL HOSPITAL, ALMA

The R. B. Smith Memorial Hospital, a community project in Alma and Gratiot County, celebrated its first birthday in October, 1935. The hospital building was a memorial gift to the community by Mrs. Inez Smith, widow of the late Dr. Rayburn B. Smith, otolaryngologist and ophthalmologist, who died in 1932 of typhoid fever. The building was formerly the residence of A. W. Wright, a lumber pioneer, and is of Vermont granite, resembling the Whitney home which now houses the Wayne County Medical Society. The interior finish varies from finely polished mahogany to cherry and curly maple. There are seven wards and private rooms of twenty-five beds, besides a four bassinet nursery. Prior to presentation, the building had been appraised at $105,000.

As the result of Mrs. Smith's gift, a community drive was conducted in the spring of 1934, to equip and endow the building. The Women's Auxiliary during the year furnished curtains, made dressings, operating and patients' gowns and equipped the kitchen. The Junior Auxiliary raised funds to fully equip the nursery. Improvements for the second year will include a doctor's lounge and library.

The hospital opened for work October 4, 1934, with Dr. B. C. Hall, Pompeii, chief of staff; Miss Floy G. Loudenslager, R.N., formerly night supervisor at the University Hospital, as superintendent, and a corps of graduate nurses.

The first year, three hundred thirteen patients

With the courtesy of the *Detroit News*

(Top row) GROVER C. PENBERTHY (25), J. M. ROBB (27), F. C. WARNSHUIS (33), CARL F. MOLL (36), L. J. HIRSCHMAN (36).

(Bottom row) H. E. RANDALL (38), GUY CONNOR (34), ANGUS MCLEAN (50), ANDREW P. BIDDLE (50).

No, the figures in brackets do not mean the ages of the various doctors. The figures indicate the number of years each has practiced medicine in this state. Seven of them are past presidents. One (Dr. Penberthy) is the present president of the society. Dr. Warnshuis is now secretary of the California State Medical Association, following twenty-one years as secretary of the Michigan State Medical Society. The occasion of the above photograph was a dinner given in honor of Dr. Warnshuis during his recent visit and address before the Wayne County Medical Society on the evening of November 11.

were admitted. One hundred twenty-five major surgical operations were performed; forty-five babies born; nineteen deaths occurred, with three autopsies performed. At a cost of twelve cents plus per meal, 14,241 meals were served. This low cost was possible through organizational and individual contributions of canned foods and vegetables during the year.

The hospital is entirely free from debt. The first year's operating profit was $2,112.40.

Monthly staff meetings are held. In conjunction with the January meeting, the first annual Clinic Day was sponsored, with the following program:

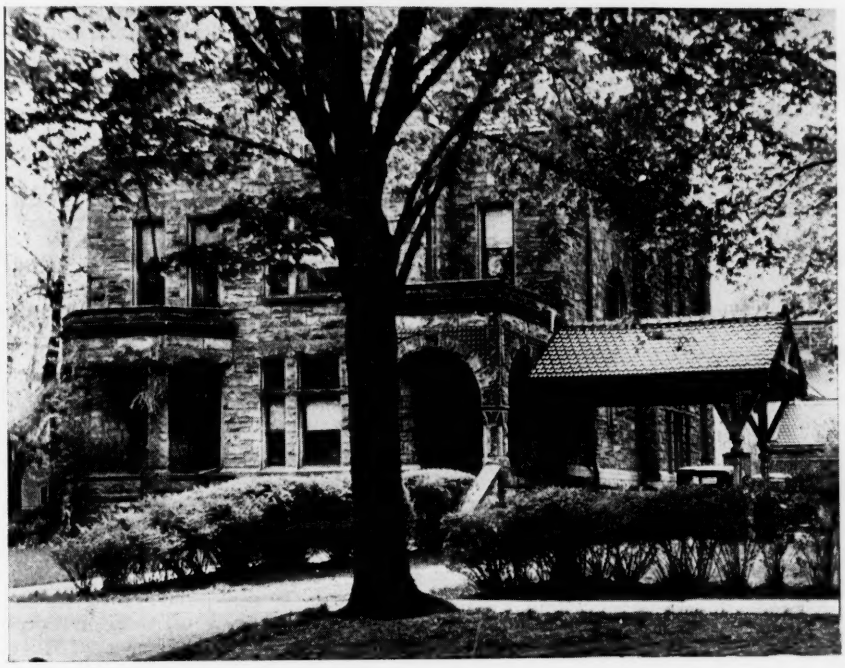
3:00 P.M. Diagnostic Clinic, Doctor Wm. S. O'Donnell, pediatrician, Detroit.
6:30 P.M. Dinner.
7:30 P.M. Scientific program. Doctor Grover C. Penberthy, Detroit. Subject: "Surgery of childhood." Motion picture, "Tannic acid treatment of burns."

The Staff personnel comprises: Superintendent, Mrs. Florence Thompson, R.N., formerly in charge of the Hayes-Green Memorial Hospital, Charlotte, Michigan.

Active staff—Dr. B. C. Hall, Pompeii, Chief of Staff; Drs. A. L. Aldrich, Ithaca; W. E. Barstow, St. Louis; M. J. Budge, Ithaca; C. E. Burt, Ithaca; W. M. Drake, Breckenridge; C. F. DuBois, Alma; R. W. Fuller, Crystal; H. H. Gay, St. Louis; B. J. Graham, Alma; F. J. Graham, Alma; A. D. Hobbs, St. Louis; L. A. Howe, Breckenridge; D. M. Howell, Alma; M. C. Hubbard, Vestaburg; E. T. Lamb, Alma; F. C. Thornburg, Alma; R. L. Waggoner, St. Louis, and K. P. Wolfe, Breckenridge.

Associate Staff—Drs. M. G. Becker, Edmore; H. B. Lehner (D.D.S.), Alma; W. R. MacInnes (D.D.S.), Alma; J. D. Sarven, Middleton, and M. Faber, Ashley.

Consulting Staff—Drs. Wm. K. Anderson, Saginaw, Roentgenology; T. F. Berberovitch, Saginaw, Surgery; H. M. Bishop, Saginaw, Surgery; D. C. Durman, Saginaw, Orthopedic Surgery; D. M. Howell, Alma, Eye, Ear, Nose and Throat; R. M. Kempton, Saginaw, Pediatrics; O. W. Lohr, Saginaw, Clinical Pathology; H. B. Lehner (D.D.S.), Alma, Dental and Oral Surgery; A. R. Moon, Saginaw, Obstetrics and Gynecology; N. F. McClinton, Saginaw, Urology.



SMITH MEMORIAL HOSPITAL, ALMA, MICHIGAN

GENERAL NEWS AND ANNOUNCEMENTS

THE MUSKEGON COUNTY MEDICAL SOCIETY was first to go over the top by its payment of 1936 dues for its members on Nov. 1, 1935. Congratulations!

* * *

Dr. F. C. Warnshuis, past secretary of the Michigan State Medical Society and now holding a similar position with the California State Medical Society, spoke before the Wayne County Medical Society on November 11, 1935. His subject was "Medical Organization in California."

* * *

Dr. C. T. Ekelund, Dr. James H. Dempster, Dr. Ralph H. Pino, Dr. C. S. Gorsline, and Wm. J. Burns attended the annual Secretaries' Conference at the American Medical Association's headquarters, November 15 and 16, 1935. This conference was attended by representatives of all states in the union.

* * *

The tenth annual clinic of the Highland Park Physicians' Club was held at the Highland Park General Hospital, December 4. The program was received too late for publication in the November number of the JOURNAL OF THE MICHIGAN STATE MEDICAL SOCIETY. The Highland Park Physicians' Clinic has become one of the chief medical events of Wayne County.

* * *

The U. S. Civil Service Commission announces competitive examinations for Principal Medical Officer (Bacillin Calmette-Guerin), and for positions of director, Division of Maternal and Child Health, and director, Crippled Children's Division of the Children's Bureau of the Department of Labor. Applications must be in not later than December 9,

1935. Information at any Post Office or from U. S. Civil Service Commission, Washington, D. C.

* * *

The Rainbow, the official organ of the League of the Hard of Hearing, edited by Dr. Emil Amberg of Detroit, contains radio broadcasted addresses over stations WWJ and WXYZ by Dr. Don W. Gudakunst, director of School Health Service, Detroit Department of Health, Dr. Henry F. Vaughan, health commissioner, city of Detroit, and Dr. Burt R. Shurly, of the consulting board of otologists, and Board of Education, city of Detroit.

* * *

Dr. Martin Hoffman of Detroit has been appointed assistant psychiatrist to Eloise Hospital. Dr. Hoffman is a graduate of the medical school of the University of Iowa, year 1922. He served his internship in Harper Hospital, Detroit, returning to his native state to practice. After a brief interval, he located in Detroit where he has been in practice since 1924. Dr. Hoffman has devoted his attention to neurology and psychiatry. The position at Eloise is full time appointment. Among other duties, he will have charge of the parole of the mental patients. Dr. Hoffman is secretary of the Wayne County Medical Society.

* * *

The present Calhoun County Medical Society was organized in Albion, December 4, 1876, and has had an uninterrupted but stormy existence since. At one time it voted to disband. At one time it had a hard struggle to continue in the face of local academies of medicine in the three cities. But it has survived and had a very honorable existence. At one time it included members from all over surrounding counties and members from both Jackson and Kalamazoo have served as president. The bulletin of the Calhoun County Medical Society presents a list of the officers from the time of organization to the present.

* * *

Dr. F. C. Warnshuis, formerly secretary of the Michigan State Medical Society, now secretary of the California State Medical Society, was entertained at a dinner at the Wayne County Medical Society club rooms, November 11, by eight past presidents of the Michigan State Medical Society. After the dinner, Dr. Warnshuis addressed the Wayne County Medical Society on the medical situation in California. He left for a short visit in Ann Arbor when he returned to Los Angeles after attending the annual meeting of state medical editors and secretaries which was held at the Palmer House, Chicago, November 15 and 16.

* * *

Dr. Angus McLean of Detroit addressed the Huron Sanilac Medical Society, October 24. His subject was "The Cause and Effects of War." "Our profession," said Dr. McLean, "seems to be a futile one when we help people to get well in a world where there are too many people already. Fundamentally this over-population is the cause of war. Nations must find an outlet for their growing population in growing markets and colonies," Dr. McLean declared. "History shows that there are three ways of checking a growing population—by famine, by plagues and by war. The average cost of killing a man during the World War was $20,077 and our cost was $440,000 per man. Sanilac County's share of the cost of this slaughter is approximately $375,000."

* * *

Sir Wilfred Grenfell of Labrador fame addressed the Wayne County Medical Society on the night of December fourth. This is the second time Sir Wilfred has appeared before the Wayne County Medical Society. Needless to say, he is a welcome guest before any medical group. His life history has been unique. Born seventy years ago, he received his medical education in England and became house surgeon to Sir Frederick Treves. In 1892, Sir Wilfred, then plain Dr. Grenfell, crossed the Atlantic with a boat fitted out with modern medical equipment. From that time he has carried on the work, bringing healing to the afflicted inhabitants along the shores of Labrador. At the present time the Grenfell Association maintains five hospitals, seven nursing stations, four boarding schools for orphans, as well as several hospital ships.

THE DOCTOR'S LIBRARY

Acknowledgment of all books received will be made in this column and this will be deemed by us a full compensation to those sending them. A selection will be made for review, as expedient.

A TEXTBOOK OF BACTERIOLOGY. By Thurman B. Rice, A.M., M.D., Professor of Bacteriology and Public Health at the Indiana University School of Medicine. 551 pages with 121 illustrations. Philadelphia and London: W. B. Saunders Company, 1935.

In this textbook the author has omitted many detailed descriptions found in the standard text, yet he gives all the practical essentials necessary for the student or the practitioner. The chapters on bacteriology in every day life and the place of bacteriology in the progress of medicine give the beginning student a good foundation upon which to begin the study of germs and of germborn diseases.

In discussing each type of bacterium, his illustrated description of its morphology and its cultural characteristics, together with a short history of the germ, the manner in which it produces disease and its specific biologic characteristics is read with fascination. This appears to be a logical method of presenting this subject to the beginning student of medicine. The discussion of immunity and bacterial virulence gives the accepted conception of these factors in the causation of disease. Toxin and antitoxin, agglutinins and precipitins are discussed both in their theoretical and practical aspects. The theoretical aspects of complements and their application in the diagnosis of disease by means of complement fixation tests is explained.

F. L. P.

THE 1935 YEAR BOOK OF RADIOLOGY. Edited by Charles A. Waters, M.D., Associate in Roentgenology, Johns Hopkins University, and Whitmer B. Firor, M.D., Director, Division of Cancer, Department of Hospitals, City of New York. 580 pages. Profusely illustrated, The Year Book Publishers, Inc., 304 South Dearborn Street, Chicago, 1935.

This work is divided into two parts. The first by Waters and Firor is concerned with the advances in x-ray diagnosis. The second part by Kaplan deals with x-ray and radium therapy. While the book is one that every physician limiting his work to radiology will want, the fact that the uses of x-rays and radium cover such a broad field in diagnosis and treatment will make the subject a matter of interest to almost every physician and surgeon. The book is a review (not an abstract, merely) of the recent voluminous literature on the subject. Much of the roentgenographic material reviewed for this book is not accessible to English readers. Almost the entire field of x-ray diagnosis is covered so far as recent studies are concerned. The subject of treatment is taken up as regards its most recent aspects. This section, which is half the book in extent, will appeal not only to the radiotherapeutist but to the surgeon and physician who may not treat the conditions for which this therapeutic agent is indicated but who are accustomed to refer such patients from time to time. In his introduction,

Kaplan reviews the present status of radiation therapy. He discusses the use of super-powered x-ray therapy but concludes that it is still a moot question whether x-rays generated by super-powered apparatus have greater therapeutic potency than those generated by two hundred kv. apparatus.

PEDIATRIC TREATMENT. A Manual of the Treatment of the Diseases of Infants and Children, Designed as Reference Work, Especially for the General Practitioner and Physicians Entering the Field of Pediatrics. By Philip S. Potter, A.B., M.D., F.A.A.P., formerly Instructor in Clinical Pediatrics at the Medical School of Syracuse University, Chief of the Pediatric Service of the University Hospital of the Good Shepherd. Attending Pediatrician at St. Mary's Infants Hospital. Attending Pediatrician to the Berkeley General Hospital and its Out-Patient Department, to the Wellbaby Conferences, and physician to the Berkeley Sunshine School for Undernourished Children, to the High School and to various Grade Schools of Berkeley, California. New York: The MacMillan Company, 1935.

This book is designed for the general practitioner and for the senior students and young practitioners entering practice. While much of the text would seem elementary to those more familiar with pediatric practice, the detailed descriptions of the technic in treatment will be of incalculable value to those for whom they are written. In the chapters on the nutrition and nutritional requirements of infants one finds the subject ably handled, although one might take issue with the statement that "certified milk is the only milk which can be used with comparative safety in large communities." Moreover, it would seem that the use of evaporated milk in the feeding of infants would merit more consideration than is given to it.

The treatment of abnormalities and conditions developing in the newborn is grouped so that much information is made easily available. The diseases of the various systems are considered in order and the author's method of treatment is given. In the treatment of several conditions, one fails to find mention of some of the remedial measures more recently suggested in the pediatric literature. While these measures may be not yet of proven value, it would seem that they should be discussed in a work of this type.

Particularly valuable to the practitioner is the chapter on the use of drugs in pediatric practice. Dosage and the physiologic effect, together with the indications and contraindications for the use of various forms of medication in pediatric practice, is discussed in an instructive manner.

F. L. P.

DISEASES OF THE LIVER, GALL-BLADDER, DUCTS AND PANCREAS. THEIR DIAGNOSIS AND TREATMENT. By Samuel Weiss, M.D., F.A.C.P., Clinical Professor of Gastroenterology, N. Y. Polyclinic Medical School and Hospital; Attending Gastroenterologist, Jewish Memorial and Beth David Hospitals, N. Y.; Consulting Gastroenterologist, Long Beach Hospital, L. I., etc. Chapter on Surgery by J. Prescott Grant, M.D., F.A.C.S., M.R.C.S., Professor of Surgery, N. Y. Polyclinic Medical School and Hospital; Attending Surgeon, City Hospital; Director of Surgery, Midtown Hospital. Chapter on Roentgenology by A. Judson Quimby, M.D., F.A.C.R., Professor of Roentgenology, N. Y. Polyclinic Medical School and Hospital; Visiting Roentgenologist, Broad Street Hospital. 358 illustrations and six color plates. Paul B. Hoeber, Inc., New York, 1935.

This is a voluminous work consisting of more than nine hundred pages in which the author gives a detailed description of each pathological condition. He discusses both clinical and experimental physiology of these organs and of the bile. He gives details of various functional tests in use and his interpretation of their value. Anomalies and abnormal anatomical variations in structure are shown in drawing and in halftone. These should be of value to the surgeon. In the chapter on nonsurgical drainage of the gallbladder, the author discusses at length the study of the aspirated material and gives a favorable opinion on this study in diagnosis and treatment of gall-bladder disease. A. Judson Quimby contributes a chapter on the use of the halogen preparations, together with the x-ray, in the study of disease of the gall bladder. A chapter on surgery of these organs is written by J. Prescott Grant, who gives the technic of many operations. The author does not neglect the medical and dietetic management of disease of these organs, but gives much information of value.

Throughout the work there is a profusion of illustrations. These are of fine quality and materially amplify the value of the text.

There are nearly one hundred pages of bibliographic references to subject matter covering these diseases, of great value to the student of this subject.

F. L. P.

THE PRINCIPLES AND PRACTICE OF MEDICINE. By Sir William Osler, M.D., F.R.S., Late Regius Professor of Medicine at Oxford University; Honorary Professor of Medicine in Johns Hopkins University, Baltimore; and Thomas McCrae, M.D., Fellow of the Royal College of Physicians, London; Professor of Medicine at Jefferson Medical College, Philadelphia. Twelfth Edition. Completely revised, reset, and printed from new plates. 1,245 pages. With charts and illustrations. Cloth. $8.50. D. Appleton-Century Company, New York and London, 1935.

A newly revised edition of Osler's famous work on practice is a noteworthy event in American Medicine. The first edition appeared in 1892. That this work continues to be in demand long after the author's death speaks well for its popularity as revised each time by Dr. McCrae. Every effort has been made to bring the work up to date by incorporating what has been found to be of permanent value. The revision of any work on medicine or surgery is largely a matter of elimination of the obsolete and the presentation of what is new. In the present revision Dr. McCrae has accomplished this without materially increasing the size. The book has been completely reset with a new style of type somewhat smaller but more easily read. The study of the patient is emphasized rather than too much reliance on the laboratory. Dr. McCrae is a strong advocate of physical diagnosis, which appears to have suffered with the perfection of laboratory methods. To quote: "The physician and student should always make it a rule to learn everything about a patient by the use of his own senses and brains. For example, to have a roentgenologist make the diagnosis of fluid in the pleural cavity should cause a clinician to be thoroughly ashamed of himself." So thoroughly has the work been revised that space will not permit enumeration of the additions and changes. To those who prefer a single volume on medicine that embodies the teaching of a single mind the twelfth edition of Osler will be found invaluable.

THE TREATMENT OF DIABETES MELLITUS. By Elliott P. Joslin, M.D. (Harvard), M.A. (Yale), Medical Director, George F. Baker Clinic, New England Deaconess Hospital; Clinical Professor of Medicine, Harvard Medical School; Consulting Physician, Boston City Hospital, with the coöperation of Howard F. Root, M.D.; Priscilla White, M.D.; Alexander Marble, M.D. Fifth Edition, Revised and Rewritten. Illustrated. Philadelphia: Lea & Febiger, 1935.

In considering the etiology of diabetes, use of the knowledge of a thorough statistical study is made. The factors of heredity and obesity are discussed critically. Charts and tables show their etiological influence. In the chapter on physiology of diabetes, one finds a discussion of the theories as to the nature of diabetes. Throughout the chapter the pathologic physiology as seen in the diabetic is compared and contrasted with the physiology of the normal individual.

The authors give their conception of food requirements of the normal individual and contrast these with the requirements of the diabetic. The principle of undernutrition is enunciated. While their "diabetic creed" is offered as the best present practical guide in caring for the diabetic, the authors recognize that advancing knowledge will necessitate changes in this creed. Three factors, diet, insulin and exercise, are stressed as of paramount importance in the treatment of diabetes.

The chapter on diabetic coma, as revised by Marble, gives a thorough discussion of this complication. Complications on the part of the cardio-vascular system, the digestive, nervous and genito-urinary systems are given worthy consideration. The subject of infection as an etiologic factor as well as a complicating factor is discussed. A chapter is devoted to surgery in the diabetic. The gravity of surgical conditions as complications is pointed out and the necessity for strict medical care in these cases is stressed. Various types of surgical complications are discussed and particular attention is given to diabetic gangrene. The relation of pathology in other glands of internal secretion is shown. Doctor Priscilla White writes the chapter on diabetes in childhood. Her discussion of this subject is complete and detailed. She stresses the fact that only in children does one see pure diabetes and that the study of the disease in childhood has brought about a revolutionized conception of the underlying causes of the disease. White, also, writes a chapter on pregnancy in the diabetic.

F. L. P.

Paul B. Hoeber
Joins Harper Brothers

Harper & Brothers announce that they have acquired the medical book publishing business of Paul B. Hoeber, Inc. A program of expansion is planned, and medical books will be published under the imprint of Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers. Mr. Paul B. Hoeber, the founder, remains in charge of this department.

Paul B. Hoeber, Inc., was established in 1901 as a medical bookstore. The first book published under the Hoeber imprint—Ehrlich's "Specific Therapeutics"—appeared in 1909. Since then it has pioneered in the publication of authoritative medical books which have been noteworthy also for their fine manufacture. The firm is well known for its series of Medical Monographs, which includes works by Francis R. Packard, Hugh H. Young, David Riesman, Sir Humphry Rolleston, Frederick Tilney, Charles A. Elsberg, and other authorities. It has specialized in medical history, and established in 1917 the "Annals of Medical History," internationally known as the outstanding publication of its kind. Among the eminent books which have appeared under the Hoeber imprint are "The Brain From Ape to Man" by Frederick Tilney, "Nervous Indigestion" by Walter C. Alvarez, "Pediatrics of the Past" by John Rurah, and the "Annals of Roentgenology" of which sixteen volumes have been published to date.

The True Economy of Dextri-Maltose

It is interesting to note that a fair average of the length of time an infant receives Dextri-Maltose is five months: That these five months are the most critical of the baby's life: That the difference in cost to the mother between Dextri-Maltose and the very cheapest carbohydrate, at most, is only $6 for this entire period—a few cents a day: That, in the end, it costs the mother less to employ regular medical attendance for her baby than to attempt to do her own feeding, which in numerous cases leads to a seriously sick baby eventually requiring the most costly medical attendance.

Lilly Adds Spectrophotometric Equipment

Complete spectrophotometric equipment has recently been installed in the Lilly Research Laboratories for work in both the visible and ultraviolet light ranges. The spectrophotometer, an instrument for measuring the light absorption and emission spectra of various substances, shows great promise as an accurate research and control tool. Although its possibilities are just being developed, its application in general research is opening up avenues of approach to analytical, purification, and standardization problems to which previously known methods will not apply. The equipment consists of a standard photometer and spectroscope for work in the visible light range; and a quartz spectrograph and a specially built rotating sector photometer for ultraviolet work. For the latter the light source is a ¾ inch, underwater spark operating at 250,000 volts, produced by stepping up 110 volts alternating current through a transformer and a large Tesla coil. For emission spectra, the light source is a 250-volt open-air arc.

CLASSIFIED ADVERTISEMENTS

WANTED—Position as assistant to physician in either general practice or surgery, preferably surgery. Recently completed three-year interneship in large Chicago Hospital. Considerable surgical training. Have spent one year in Pathology. Single. Michigan license. Available immediately. Straight salary or salary and percentage. Address Box 626, Sheffield, Alabama.

MORPHINE AND OTHER DRUG ADDICTIONS—Institutional care and treatment of selected patients who have responsibilities, wish to make good and learn how to keep well; methods easy, regular, humane. Twenty-eight years' experience. Dr. Weirick's Sanitarium, Elgin, Ill.

DR. CHARTERS' MATERNITY HOSPITAL

A private hospital and home for young women desiring seclusion. Patients accepted any time during gestation. Rate reasonable.

FLUSHING .....MICHIGAN

INDEX TO VOLUME XXXIV

AUTHORS INDEX

Adams, F. O. 288, 293
Allen, Thomas D. 219
Altshuler, Ira M. 236
Aronstam, Noah E. 440
Badgley, Carl E. 469
Barker, Lewellys F. 197, 268
Battley, J. C. S. 229
Beigler, Sydney K. 438
Bell, J. Kenner 150
Belote, G. H. 172
Benning, C. H. 541
Biddle, Andrew P. 645
Brachman, D. S. 529
Brooks, C. D. 417
Burns, William J. 109
Butler, William J. 479
Campbell, Alexander M. 146
Cantor, Meyer O. 15
Champion, Merrill E. 297
Chrouch, Laurence A. 484
Coller, F. A. 281
Collins, Ward E. 145
Cope, H. E. 536
Crane, A. W. 19
Croll, Leo. J. 543
Curry, George J. 316
Cutler, Elliott C. 139
Davis, C. R. 85
Davis, James E. 472
Davis, Loyal 487
Donald, William M. 17
Dowdle, Edward 294
Fairchild, Robert D. 774
Farbman, Aaron 767
Fralick, F. Bruce 11
Freund, Hugo 208
Fullerton, William D. 521
Gariepy, L. J. 108, 546
Glowacki, B. F. 535
Gordon, Thomas D. 537
Gordon, William Henry 7, 167
Hackett, Walter L. 84
Hewitt, Herbert W. 421
Hirschman, Louis J. 662
Horan, T. N. 772
Hudnutt, O. D. 440
Hull, L. W. 432
Jamieson, R. C. 654
Jones, M. M. 614
Krieg, Earl G. 156
Laning, G. M. 772
Leithauser, Daniel J. 15
Litzenberg, Jennings C. 650
Long, Perrin H. 157
Luce, H. A. 107
McGillicuddy, Oliver B. 32
MacMillan, J. A. 497
Marshall, Don 172
Maurits, Reuben 463
Meade, William H. 293
Metzger, Harry C. 502
Miller, Norman F. 4
Moehlig, Robert C. 263
Molner, J. G. 288
Owen, Robert G. 536
Penberthy, Grover C. 1
Pettis, E. M. 358
Powers, Julius 26, 93
Price, Alvin E. 757
Purdy, Clayton 552, 621, 679
Rector, Frank Leslie 666, 778
Rennell, E. J. 92
Reye, H. A. 212
Roehm, H. 775
Rothbart, B. 424
Rundles, W. Z. 777
Saltzstein, Harry C. 762
Sanderson, Susanne 166
Schiller, Arthur E. 608
Sehring, G. H. 4
Shaffer, Loren W. 601
Sidall, Roger S. 300
Silberman, Maurice M. 84
Smith, Ferris 593
Smith, J. Campbell 598
Smith, Richard R. 575
Snyder, Clarence H. 224
Stafford, Frank W. 108
Stalker, Hugh 36
Stapleton, William J., Jr. 307, 504
Stewart, G. C. 314
Stieglitz, Edward J. 70
Straith, Claire L. 64
Sturgis, Cyrus C. 59
Sulzberger, Marion B. 78
Swanson, Cleary N. 585
Thomas, William A. 581
Tuck, R. G. 89
Valade, Cyril K. 426
VandenBerg, Henry J. 596
Van Rhee, George 604
White, S. Marx 747
Willis, Henry Stuart 589

CONTRIBUTED PAPERS

A

Abdominal pregnancies occurring in Detroit during 1933. Cleary N. Swanson, M.D., 585
Agranulocytosis with recovery, A case of, following the administration of concentrated liver extract. O. D. Hudnutt, M.D., 440
Allergic dermatoses, A suggestion for the classification of certain. Marion B. Sulzberger, M.D., 78
Allergic individual, The rhinological management of the. James E. Croushore, M.D., and Samuel J. Levin, M.D., 369
Andrews, Frank, The education of. A. W. Crane, M.D., 19
Anesthesia, Individualized. Reuben Maurits, M.D., 463
Appendicitis, The gridiron incision in. C. R. Davis, M.D., 85
Appendicitis, The tragedy of. C. D. Brooks, M.D., 417
Arterial disease, hypertensive, The biologic unity of. Edward J. Stieglitz, M.D., 70
As seen abroad. Julius Powers, M.D., 26, 93

B

Bitterling pregnancy test. Robert G. Owen, M.D., and H. E. Cope, M.D., 536
Brain tumor complicating pregnancy. William H. Meade, M.D., 293.
Burns, tannic acid, Treatment of. Grover C. Penberthy, M.D., 1

C

Cancer survey of Michigan. Frank Leslie Rector, M.D., 666, 778
Carcinoma of the uterus: Its early diagnosis and treatment. William D. Fullerton, M.D., 521

Cataract, Dinitrophenol. W. Z. Rundles, M.D., 777
Cataracts, Acute, presumably due to dinitrophenol therapy. B. F. Glowacki, M.D., 535
Child health in Michigan, Comments on an experiment in. Merrill E. Champion, M.D., 297
Chronic urinary tract infections, A low calorie ketogenic diet for the treatment of. Reed M. Nesbitt, M.D., Curtis H. McDonnell, M.D., and Genevieve C. Rourke, M.D., 347
Cigarette smoking, Excessive, in women and its effect upon their reproductive efficiency. Alexander M. Campbell, M.D., 146
Common colds, A discussion of the value of various prophylactic measures in the prevention of. Perrin H. Long, M.D., 157
Coronary thrombosis with paroxysmal ventricular tachycardia. Hugh Stalker, M.D., 36
Cranio-cerebral injuries, The treatment of. Loyal Davis, M.D., 487

D

Dermal lesions, The changing aspect of, in relation to internal abnormalities. R. C. Jamieson, M.D., 654
Dermatitis, Metaphen. G. H. Belote, M.D., and Don M. Marshall, M.D., 172
Dermatophytosis, Factors affecting the immunity balance in. Loren W. Shaffer, M.D., 601
Diabetes insipidus after epidemic encephalitis. L. E. Himler, M.D., 350
Diet to skin diseases, The questionable relationship of. Cyril K. Valade, M.D., 426
Doctor and malpractice, The. William J. Stapleton, Jr., M.D., 504
Doctor Christian—A tribute, 246
Duodenal obstruction, Intermittent. J. Kenner Bell, M.D., 151
Duodenal ulcers, perforated, Multiple acute. Edward Dowdle, M.D., 294

E

Ectopic pregnancies. David M. Davidow, M.D., 376
Eczema, Infantile. George Van Rhee, M.D., 604
Ekelund, C. T., Secretary-Elect, 183
Essential hypertension, The status of. S. Marx White, M.D., 747
Every physician a health teacher. Ward E. Collins, M.D., 145
Eyes, Some of the changes found in the, in the control and treatment of which the general practitioner and the eye physician should coöperate. Thomas D. Allen, M.D., 219

F

Facial wounds due to motor accidents, The treatment of. Claire L. Straith, M.D., 64
Feeding of the premature infant, The. B. Rothbart, M.D., 424
Fetal hypoglycemia due to hyperinsulinism. William Henry Gordon, M.D., 167
Fibroma of the pylorus, Solitary intramural. Daniel J. Leithauser, M.D., and Meyer O. Cantor, M.D., 15
Fossa navicularis, Pathological process of the. Noah E. Aronstam, M.D., 440

G

General practitioner, The, as his own neurologist. Hugo A. Freund, M.D., 208
Glaucoma, The management of. F. Bruce Fralick, M.D., 11

H

Health survey, The periodic, in women. Edwin S. Hoffman, M.D., 374.
Hematuria. William J. Butler, M.D., 479
Hepatic insufficiency, Acute. William A. Thomas, M.D., 581
Heredity and environment in relation to the handicapped.
  Lecture I. The origin and nature of human handicaps. Lewellys F. Barker, M.D., 197
  Lecture II. The amelioration of the conditions of the handicapped and the possibilities of reduction of their numbers by modifications of heredity and environment. Lewellys F. Barker, M.D., 268
Hernia, Interstitial. Sydney K. Beigler, M.D., 438
History taking, The art of. Harry C. Saltzstein, M.D., 762
Hyperthyroidism with blood phosphorus and calcium changes. I. I. Bittker, M.D., 381

I

Idiopathic megacolon occurring in a woman forty-five years of age. E. J. Rennell, M.D., 92
Intestinal fistula. Henry K. Ransom, M.D., and Frederick A. Coller, M.D., 281

L

Liver deaths following surgery of the gallbladder. Herbert W. Hewitt, M.D., 421
Lobar pneumonia, The serum treatment of. Alvin E. Price, M.D., 757

M

Maimonides, 247
Maternal mortality and the practice of obstetrics in Michigan. Jennings C. Litzenberg, M.D., 650
Measles, Immune globulin used as a preventive and modifier of. G. M. Laning, M.D., and T. N. Horan, M.D., 772
Medical insurance. G. C. Stewart, M.D., 314
Medical morals, Major and minor. Lewellys F. Barker, M.D., 352
Medical practice in Europe, An aeroplane view of. Louis J. Gariepy, M.D., 546.
Medical school, Important integrations of the. James E. Davis, M.D., 472
Medicine, The future of. J. C. S. Battley, M.D., 229
Medicine: The influence of the social forces. Andrew P. Biddle, M.D., 645

N

Neurotic reactions in marriage. H. A. Reye, M.D., 212
Neutropenia, Malignant: Its etiology and treatment. Wm. Henry Gordon, M.D., 7
Normal nutrition in children. Harry C. Metzger, M.D., 502

O

Oral mucous membrane, Some interesting and unusual lesions of the. Arthur K. Woodburne, M.D., 384
Osgood-Schlatter's disease: Principles of treatment with a review of three cases. Robert D. Fairchild, M.D., 774
Our interesting "Orient." W. J. Stapleton, Jr., M.D., 307
Ovarian cyst, extraperitoneal, Report of a case of. Maurice M. Silberman, M.D., 84
Ovary, A solitary teratoma of the. Case report. Susanne Munro Sanderson, M.D., 166

P

Paroxysmal hemoglobinuria. Louis Jaffe, M.D., 312
Patient, The, before operation. George J. Curry, M.D., 316
Pelvic prolapse, Conservative repair of. Earl G. Krieg, M.D., 156
Peri-anal suppuration as a focus of infection. Louis J. Hirschman, M.D., 662
Physicians as dramatists. Gaylord W. Bates, M.D., 362
Physician's philosophy, A. J. A. MacMillan, M.D., 497

Physiological postural deformities in contrast to pathological postural deformities. Carl E. Badgley, M.D., 469
Pituitary basophilism, Some clinical aspects of. Robert C. Moehlig, M.D., 263
Pituitary disease, Diagnosis of. Aaron Farbman, M.D., 767
Pneumonia, An appraisal of the methods of treating. Cyrus Sturgis, M.D., 59
Pneumonia—A short clinical lecture. William M. Donald, M.D., 17
Poliomyelitis with Kolmer's vaccine, Active immunization of children against acute anterior. H. Roehm, M.D., 775
Post-graduate education, 185, 249
Potter type of internal podalic version, The value of the, in the management of persistent posterior occiput cases. M. M. Jones, M.D., 614
President's annual address: Michigan and our profession—yesterday and today. Richard R. Smith, M.D., 575
Puerperal sepsis. Laurence A. Chrouch, M.D., 484
Pyloric stenosis, Congenital hypertrophic. Henry J. VandenBerg, M.D., 596

S

Sickle-cell anemia: Etiology. Harold A. Robinson, M.D., 388
Sinusitis, Chronic, in children. Ferris Smith, M.D., 593
Skin diseases in industry. Arthur E. Schiller, M.D., 608
Smollett, Tobias G., An appreciation of. Roger S. Siddall, M.D., 300
Splenic artery, Aneurysm of the, with fatal hemorrhage. Geo. L. LeFevre, M.D., and E. M. Pettis, M.D., 358
Spondylitis in undulant fever. Clarence H. Snyder, M.D., 224
Sterile surgical maggots, The source and production of. J. G. Molner, M.D., and F. O. Adams, M.D., 288
Strabismus, concomitant convergent, The proper treatment of. Leo J. Croll, M.D., 543

T

Temporal lobe abscess of otitic origin. Oliver B. McGillicuddy, M.D., 32
Toxic thyroid patient, The preoperative and postoperative treatment of the. Elliott C. Cutler, M.D., 139
Trichomonas vaginalis vaginitis, The treatment of. J. Campbell Smith, M.D., 598
Traumatic neurosis. Ira M. Altshuler, M.D., 236
Tuberculosis, early, The diagnosis of. Henry Stuart Willis, M.D., 589
Tuberculosis in the adolescent. D. S. Brachman, M.D., 529
Typhoid fever, Outbreak of, due to carrier. C. H. Benning, M.D., 541

U

Urethritis, Some observations on. L. W. Hull, M.D., 432
Uterine fibroids: The importance of diagnostic curettage in their management. Norman F. Miller, M.D., and Geo. H. Sehring, M.D., 4

V

Vomiting, Recurrent. Thomas D. Gordon, M.D., 537

W

Welfare medical service in Oakland County. R. G. Tuck, M.D., 89
Woman's Auxiliary to the Wayne County Medical Society, History of the, 450

DEPARTMENT INDEX

Be Prepared for Your Cancer Patient

Responsibility of the Physician to the Cancer Patient, 789

Communications

Pages 54, 136, 195, 257, 327, 457, 516, 572, 803

County Societies

Barry County, 51, 409
Clinton County, 190
Dickinson-Iron County, 190
Eaton County, 191, 340
Houghton County, 112, 191, 409, 515
Kent County, 51
Livingston County, 692
Monroe County, 191, 515
Muskegon County, 191, 253, 571
Northern Michigan, 253
Saginaw County, 134
St. Clair County, 51, 192, 341, 409, 410, 800
Shiawassee County, 409
Tuscola County, 52, 410
Wayne County, 253, 410

The Doctor's Library

Pages 57, 138, 260, 346, 416, 461, 520, 644, 696, 806

Editorial Department

Affairs in California, 619
Andrews, Dr. Frank, 41
Annual Meeting, The, 506
Beaumont Foundation Lecture, The, 242
Cancer Cures, 676
Common Cold, The, 176
Corbus, Doctor, Resigns as Councilor, 241
Credit Rating, 99
Crippled Child Act, The, 41
Doctors as Legislators, 507
Donald, Dr. William M., 785
Economic Security, 40
Fever Therapy, 394
Food Faddist, 177
Fractures, 443
Function of Health Organizations, 676
Getting Along by Degrees, 673
Good Will, The Value of, 396
Group Budgeting for Hospital Care, 673
House of Delegates Deliberations, 678
House of Delegates, Special Meeting of the, 241
How to Attain Greatness, 620
Huber, G. Carl, Anatomist, 100
Insidious Propaganda, 786
Late Dr. Caroline Bartlett Crane, The, 321
Lay Control, 240
Malpractice, 241
Malpractice, Testimony in, 442
Mastoiditis, 176
Medical Autonomy, 99
Medical Economics, 98, 395, 507
Medical Papers, 507
Medico-Legal Department, 551
Mental Patient, The, 318
Moore, Dr. Vernor M., 319
New and the Old, The, 508
Novy, Frederick G., 39
Ownership of X-ray Films, The, 675
Poor Fish, 551
Popular Profession, A, 397
Postgraduate Medical Education, 784
Postgraduate Medicine, 388
Preserve Your Journals, 177
President's Address, The, 619
Private Institutions Fare Better than Public in Depression, 674

Radiologic Exhibit, 506
Records, 39
Second Cause of Death, The, 787
Socialized Medicine, 550
"State," The, 620
Strange Bedfellows, 98
Surgical Operations, Names of, 319
Taxes, 319
Treating Tuberculosis, 176
Trusting Brains, 177
Vale 1935, 784
What Price "Slendering," 551
When is a Doctor a Layman?, 242

The Editor's Easy Chair

Doctor and the Public, The, 629
Doctor in History, The, 444
Journalism, 322
Literature, 182
Receding Frontiers, 42
Reviewing an Old Book, 104

Medical Economics

Afflicted Persons Laws of Michigan, The. L. J. Gariepy, M.D., 108
Discussion of Practice of Medicine by Corporations. Frank W. Stafford, M.D., 108
Metropolitan Detroit Health Council. William J. Burns, 109
Plea for Medical Leadership, A. H. A. Luce, M.D., 107

Medico-Legal Department

Legal Consent to Operations. Clayton Purdy, 621
Statute of Limitations as Applied to Physicians and Surgeons, The. Clayton Purdy, 552
Sterilization of Mental Defectives in the State of Michigan. Clayton Purdy, 679
Unjust Malpractice Cases. Herbert V. Barbour, 788

Michigan's Department of Health

Pages 134, 195, 256, 344, 411, 455, 515, 573, 640, 694

A Moment of Medical History

Antisepsis, 44
Bacteriological and Tissue Culture Methods, 554, 622
Development of Books, The, 243, 323
Development of the Ophthalmoscope, The, 509
Microscopical Technic, 398
Preventive Inoculation, 681
Radium, 101
Surgical Anesthesia, 446
X-rays, The, 178

News and Announcements

Pages 55, 137, 196, 258, 345, 412, 458, 516, 574, 643, 695, 791, 804, 805

Obituary

Amadon, Philip D., 455
Bender, Frederick P., 344
Christian, Edmund E., 195
Cunningham, J. W., 803
Dougher, Edward J., 573
Ferguson, G. H., 343
Gesner, George, 803
Hayward, Edward H., 257
High, Charles V., 641
Huber, G. Carl, 55
Knight, H. Edward, 134
Lehman, Christopher G., 803
Maire, Lewis E., 134
Manwaring, J. G. R., 343
Polozker, I. L., 573
Smith, David Trumbull, 641
Stringham, W. R., 195
Van Zwaluwenburg, Cornelius, 803
Varney, H. R., 573

President's Page

The Destiny of Immortal Medicine is in Your Hands, 783

Society Activity

Afflicted Child Care, 795
Afflicted Crippled Children Conference, 692
American Medical Association Conference on County Plans, 406
American Medical Association Convention, The, 452
Announcements, 685
Annual Meeting, The 1935, 558
Annual Meeting, The 1935, Program, 561
As the Matter Now Stands (Michigan Crippled Children Commission), 454
Supplement, 514
Attention All Secretaries, 186
Bay County Plan for Medical Investigation of Applicants for Hospitalization—Summary, 796
Buying Health, 49
Cancer Committee, Minutes of Meeting, 799
Cancer in Michigan, 48
Cancer Problem in Michigan, The, 110
Conference of County Secretaries, Annual, 252
Proceedings, 328
Council and Committee Meetings, 797
Council of the Michigan State Medical Society:
Annual Meeting (Two sessions), 689
Executive Committee Meetings, Minutes, 49, 188, 339, 408, 570, 690, 691, 798
Midwinter Meeting, 110
Midwinter Meeting, Minutes, 113
Dr. Tuck's Impression of Chicago Conference, 407
Dues Increased, 794
Federal Survey of Chronic Illnesses, 634
First Year, The, 250
Have You Paid Your Dues?, 252
Headlines and Comments, 635
High Schools Debate, 634
House of Delegates of American Medical Association, Special Meeting of the, 186
Report of Reference Committee on Special Meeting, 246
In Memoriam, 50
Interstate Medical Assembly Program, 631
Joint Committee on Health Education, 794
Legislation, 252
Legislative Accomplishments, 453
Legislative Committee, Minutes of Meeting, 799
Legislative Lobbying, 188
Medical Education and Practice, 403
Medical Relief in Ontario, 251
Michigan State Medical Society:
Annual Meeting, The 1935, 558
Program, 1935 Annual Meeting, 561
Seventieth Annual Meeting, 513
Seventieth Annual Meeting Proceedings, 697
X-ray Exhibit at State Meeting, 556
Michigan State Medical Society—A Retrospect and a Valedictory, 685
Michigan Women Physicians Meet at the Soo, 688
Mr. Millbank Looks at the Problem, 189
New Secretariat, The, 794
Officers for 1935-1936, 634
On Regimentation and Bureaucracy, 636
Our Editor Honored, 514
Pediatricians Meet, 691
Permission to Operate, 338
Postgraduate Study—University of Michigan Medical School and Michigan State Medical Society—Program, 569
Present Status of the Care of Afflicted Children in Michigan, 636
Public Relations Committee, Minutes, 797
Soldier in Science, A, 187
Soo Meeting, The, 625
Supplement to "As the Matter Now Stands," A, 514
What of the New Year?, 48

Woman's Auxiliary

Pages 52, 132, 192, 254, 341, 410, 454, 572, 639, 692, 801